

THE SCHOOL JOURNAL

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(Established in 1870)

A MONTHLY JOURNAL OF EDUCATIONAL PROGRESS

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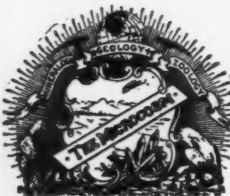
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THE SCHOOL JOURNAL

A Monthly Journal of Education

Vol. LXXVI.

March, 1909

No. 7

OSSIAN LANG, Editor.

The Country and the City Problem

During the month of February there have been published two public documents of exceptional importance for the educational and general social life of America. One is the Report of the Country Life Commission, together with the special message of President Roosevelt transmitting that report. The other is the masterly "Tenth Annual Report" of Superintendent William H. Maxwell, of New York City. One document deals with the conditions of rural life, the other sets forth some of the pressing educational problems that are facing American cities. The two together constitute the most stimulating and helpful publications that have appeared in many a day.

Improvement of Country Life

President Roosevelt's heart speaks earnestly and forcibly in his special message to Congress. "Farming," he writes, "does not yield either the profit or the satisfaction that it ought to yield, and may be made to yield. There is discontent in the country, and in places discouragement. Farmers as a class do not magnify their calling, and the movement to the towns, tho, I am happy to say, less than formerly, is still strong." The President believes that farmers can and must help themselves by "better farming, better business, and better living on the farm."

"Better farming" is made possible by the vast amount of practical information to be had for the asking regarding the most efficient methods of agricultural procedure. The Department of Agriculture is rendering splendid service. Many states maintain good agricultural experiment stations and schools. What is still lacking is the proper organization of a system of practical training of the boys and girls in the elementary schools for life on the farm. We need teachers in the country schools, preferably married men, who are themselves scientifically trained farmers, and who love the country. Here we can learn useful lessons of France, Germany, Holland, and Sweden.

President Roosevelt puts it that a new kind of school is needed in the country, "which shall teach the children as much outdoors as indoors and perhaps more, so that they will prepare for country life, and not as at present, mainly for life in town." There is need, too, of text-books specially adapted to rural conditions. The country schools can be made the great regenerating stations of our national life.

"Better business" is a result which the schools, as at present constituted, can affect only very remotely. If the schools were utilized socially, as they well might be, they could do great things for the development of such "effective co-operation among farmers" as the President suggests,—the kind of co-operation that will put the farmers "on a level with the organized interests with which they do business." The states and the national government can give substantial assistance by pro-

viding "better means of communication, including good roads and a parcels post."

"Better living on the farm." This is a most comprehensive phrase. It includes not only the mere "living" that is earned, but the life that is lived. How can the farmer keep his soul alive? How can he get a taste of the freedom that should be his as a human being living under the Stars and Stripes? This is the central problem.

"Man does not live by bread alone." Much less does he *labor for bread* alone. He labors to be free. Every hour saved for playtime is an hour won for freedom and humanity. Two results to be accomplished first are (a) that the farmer systematize his work so as to gain from each day's task the fullest possible amount of leisure time; (b) that he employ his leisure time in the most enjoyable fashion—enjoyable is the word, for only when the time is enjoyable will it be truly profitable. The latter is, in my opinion, a fundamental proposition. Once the farmer has learned how to enjoy himself, the question of saving time and money for this purpose will take care of itself.

President Roosevelt frames the problem in these words:

One of the chief difficulties is the failure of country life, as it exists at present, to satisfy the higher social and intellectual aspirations of country people. Whether the constant draining away of so much of the best elements in the rural population into the towns is due chiefly to this cause or to the superior business opportunities of city life may be open to question. But no one at all familiar with farm life thruout the United States can fail to recognize the necessity of building up the life of the farm upon its social as well as upon its productive side.

The one solution that I see and have advocated for a number of years is that the school be transformed into the social center of the community. The Commission on Country Life suggests the country church and the extension, in country communities, of such work as that of the Y. M. C. A., as the most desirable agencies for the leavening of country life. This is all very well, but the common school can do a greater work than both these together. If all people went to the same church, and that particular church would lend itself to the fostering of all forms of harmless social play, it could no doubt be made the most efficient social center in its own community. But at best the church must always remain a private institution. That means that those who are not members will never feel as free to participate in the social opportunities it offers as they would want to be, to enjoy themselves thoroly.

The common school is the place. It furnishes the only platform on which all the people of the community can gather, whether rich or poor, young or old, believers or unbelievers. Let the individuals swear by whatever politics they like, let them be total abstainers or take their whiskey

straight, let them find their greatest bliss in a game of cribbage or regard the barn dance as the acme of fun. As long as they comport themselves respectably and do not run counter to the regulations adopted by common consent for the social utilization of the school, they are all welcome. Nor does anyone have to hesitate to share in the pleasure provided at the school, for each is, by virtue of his residence in the district, part owner of the school. It is the *common school*, the one thing that all individuals in the community share in common.

The betterment of life in the country is a question that should appeal to every American wherever his bed may be located.

The City Schools

Dr. Maxwell's report for the year ending July 31st, 1908, is a model of what such a document may be. The statistical information one looks for is given in a concise and convenient form. In less than three hours one may obtain from it a clear idea of all important points concerned in the greatest school system on this continent, during the whole year. Of especial interest to teachers in other cities, and to the friends of the schools everywhere, is what Dr. Maxwell has to say regarding retardation of children in their progress thru the grades, the care of the physically and mentally deficient, instruction in morals, evening schools, and vocational schools.

One of the most important recommendations is that a superintendent of research be appointed as an assistant in the superintendent's office. Chicago has had an officer of this sort. But his duties have not been so clearly defined, nor has his work had the intensely practical purpose which Dr. Maxwell has laid down. As a matter of fact, the new officer is to be a director of statistical investigation, such as Dr. J. M. Rice proposed some years since.

Dr. Maxwell's words with regard to "vocational training" or "trade schools" are worthy of the most careful consideration. He shows that "pupils remain longer in the traditional high schools than in the vocational high schools." The reasons he assigns for that condition may not appear convincing, but these conclusions certainly are:

Before vocational training can ever be firmly established in a public school system, there must be co-operation between the employers of labor and the school authorities for two distinct purposes: first, to secure training in the schools that will actually fit boys and girls for different pursuits; and, second, to secure a preference in employment for those who have completed the full course of training, whatever it may be. Boys and girls need a definite object toward which to work in vocational training, as they have had for ages in literary training.

The need of systematic instruction in morals is strongly reiterated. Dr. Maxwell suggests that educators should formulate large rules of conduct, well-attested in the lives of the noblest. "I do not undervalue," he writes, "the incidental instruction in morals and manners which our teachers now give, as they have been directed; but I am also of opinion that more systematic and detailed instruction is needed to the end that all the children of this great city may not leave its public schools without clearly defined notions of a right, of a duty, of virtue, of truth and falsity, of right and wrong, of honesty and dishonesty, of the binding force of contracts, and of respect for law."

During the spring and summer months many immigrants land on our shores. A large proportion remain in New York. Dr. Maxwell brings forward a suggestion that should appeal strongly to every friend of humanity, when he recommends

that "evening schools to teach English to foreigners be maintained during June, July and August." He is right: "The sooner our immigrant learns our language and becomes familiar with our laws the sooner he will become a valuable asset to the community." The patronizing attitude which some schoolmen assume toward the newcomer to our continent is rebuked by the logic of this strong statement. Every educated individual is a distinct addition to the wealth of the state.

* * * * *

President Roosevelt and the Country Life Commission on the one hand, and Dr. Maxwell on the other, have set forth concisely some of the great needs of cities and rural communities. The development of a remunerative, enjoyable and elevating life of the farmer is the problem in the country. The improvement of the condition of the unadjusted and unfortunate is the problem of the city. The common school can do much toward the solution of the problems here briefly indicated. Efficient adjustment of the schools to the material, ethical and general social needs of their communities is the chief need. The other is fullest development of the social opportunities of the common school, so as to make this school the great social clearing-house of the community in which it is located, after the plan that has been repeatedly advocated in these pages. The more speedily the recommendations of President Roosevelt and Dr. Maxwell are translated into actuality the better it will be for the life of the nation.

[See also the Resolutions adopted by The New England Superintendents, on page 280]

Dr. Edwin G. Cooley has finally relinquished the superintendency of the Chicago schools, after something like nine years of struggle and contention such as probably no other schoolman has ever braved. He has accepted the presidency of the publishing firm of D. C. Heath & Co., at a salary of \$12,000. The reason he gives for his retirement is that his health and strength have been sapped by the incessant bickerings of the office, and that he wants to give his remaining strength to constructive work in a less trying department of educational work.

The schools of Cleveland have been examined again. This time a test has been applied covering about twenty times as many pupils as three years ago, when the people were regaled on much excitement about the neglect of the three R's. The schools today are doing efficient work in the so-called essentials. Superintendent Elson's policy appears to have been fully sustained.

The Chicago Teachers' Federation has published a report "showing results of fifteen years of organization." The report can be obtained for ten cents a copy. It covers a most interesting chapter in the history of teachers' organizations.

The annual report of the United States Commissioner of Education for 1908 is ready for distribution. Six months after the close of the year covered by the report the manuscript was transmitted for publication. Dr. Brown has accomplished wonders. The reports of the Bureau are now actually up to date. It is hoped that Congress will soon get around to the provision of a suitable building for the Bureau. Larger and more sanitary quarters are absolutely needed. Present provisions for the Bureau of Education do not reflect credit on the national government.

Group Teaching in Elementary Grades

By ANDREW W. EDSON, Associate City Superintendent of Schools, New York City

Much has been said of late at educational gatherings and much has been written about group teaching in the elementary grades. This discussion has led thoughtful teachers more and more from mass teaching to individual instruction. Mass teaching is apparently in the line of least resistance, and unless the attention of teachers is directed constantly to the many advantages of separating a class into two or more groups, this separation will not be made.

The object of all classification is to place pupils in right relations to work and to each other, and to facilitate progress thru the grades. In any class, differences are sure to exist—in the ages and maturity of pupils, in their ability and power of application, in regularity of attendance, and in the amount of assistance rendered at home; and these differences must be recognized. Any system of grading has a tendency to hold in check the bright pupils, and thus to stifle rather than to quicken mental activity. Again in the usual plans of grouping, the dull and backward pupils often fail to grasp much of what the brighter pupils understand readily and thus lose interest in their work.

ESSENTIALS

The essentials in any well-arranged and wisely supervised system of schools are: A broad and flexible course of study; short intervals for promotion; and individual attention at every step. The principle involved in promotion should be kept clearly in mind, namely: *Promote a pupil at any time when the work of the grade above better meets his needs than does the work in the grade in which he is placed.* It should therefore be the ambition of a teacher to advance deserving pupils rather than to hold back class leaders. Loose gradation affords the teacher an opportunity to recognize and reward effort, to promote and demote pupils easily, and to re-classify frequently.

SINGLE DIVISION

The main arguments in favor of teaching pupils in a single division are (a) fewer classes; (b) more time for each class exercise and presumably more thoro work; (c) accelerating effect of mass movement; and (d) less work for the teacher.

These arguments may seem unanswerable to the teacher who has never divided her class into groups for purposes of study and recitation. Let her give the plan a fair trial and she will find an answer to her doubts. The real excuse in most cases for not dividing a class into groups is the dislike to try experiments and the fear that the division may entail more work for the teacher, an excuse that does not deserve serious consideration.

TWO DIVISIONS

The main arguments in favor of at least two divisions in the main subjects in a class are:

(a) A small group of pupils can be kept interested, attentive, and mentally alert better than can a class of forty or fifty pupils. In other words, any teacher, however skillful and successful she may be, will hold the enthusiastic attention of one-half or one-third of a large class better than she can of the entire class; and she can do more

and better work in fifteen minutes with the individuals in a small group than she can in thirty minutes with the individuals in a large class. Small groups encourage, even if they do not guarantee, genuine teaching; large groups discourage individual attention and instruction.

(b) A definite time for study is afforded. In mass teaching there is a tendency to make the recitation too prominent. This is owing partly to the fact that teachers, when closely supervised, feel that their work and worth are determined largely by the recitation. The wise teacher in the elementary grades regards the study period, if well used, of fully as much value to the pupils as is the recitation period. Unless the program allows a definite time for study as well as for recitation, independent and thoro study is sure to be neglected.

(c) The power of concentration and inhibition will be strengthened by a division of the class into at least two groups. Pupils who recite in a single division are apt to grow intellectually weak; they cannot apply themselves with vigor to the work in hand, and when they enter high school, they find it difficult to prepare their lessons without the constant oversight and assistance of a teacher. The reason for this helplessness in the higher grades is due to the fact that pupils have not been taught in the elementary grades to apply themselves to study, to the mastery of books, and to do this independently and energetically, even while other work is being carried on in the room.

(d) When the class recites in a single division, there is less opportunity for the teacher to talk. The teacher must necessarily explain less in short periods with two divisions than in a long period with a single division. And a point well worth consideration is the fact that her questions and explanations must be given in a *quiet voice*, lest she disturb the division which is preparing a lesson. This one point alone is ground enough for requiring group work for a large portion of the school day in every elementary school.

(e) During the recitation there will be more attention to the individual child in a small group than in a large group, and more opportunity for wise assistance and for the promotion of deserving pupils.

The plea in favor of two divisions in any class resolves itself therefore into a plea for greater care and closer oversight of the individual pupil. The special plans for classifying and promoting pupils that have been presented in the past few years by Superintendents Search of Pueblo, Shearer of Elizabeth, Cogswell of Cambridge, Van Sickle of North Denver, Reed of Odebolt, and Kennedy of Batavia all have as their basis the special needs of the individual child.

SUGGESTIONS

No division of a class into groups should be undertaken until the teacher understands thoroly the reasons why the change is thought desirable and has some clearly defined plans of procedure. Unless she enters upon the work intelligently and enthusiastically the experiment at best will be only a partial success.

It may be best at first to divide a class in but a single subject, and possibly never in more than two or three subjects. In writing, drawing, con-

structive work, physical training, music, spelling, written composition, and in development work in other subjects, it is not necessary to have more than a single group in a room. It may be best to have the same number of pupils in each group, or one group may have twice as many as does the second group, everything depending upon circumstances. It may be well at times to have the groups identical in all subjects, or it may be wise to have a pupil in Group A in language, for instance, and in Group B in arithmetic. It all depends, again, upon the ability of the individual pupil and upon the purpose of the teacher in making the division. Even if the pupils are closely graded, and if there is no material difference in the ability and progress of the pupils, a division into groups should be made *if for no other purpose than to afford time and opportunity for study.*

EXAMINATION OF SEAT WORK

It should be the invariable practice of a teacher to give some attention to the work in which pupils have been engaged during the study period. If this is not done, children will grow careless, and the study period will be worth but little to them. The inspection may be brief, but it should be made.

NEW YORK CITY PLANS

In a very large number of schools in the City of New York, special classes have been formed within the past few years; Grade "C" classes for the purpose of teaching English to foreigners; Grade "D" classes for the purpose of giving a good elementary education to over-age pupils, who must secure employment certificates as soon as the law permits; and Grade "E" classes for over-age pupils who may be induced to remain in the school and complete the elementary course, if given special attention for a term or two at the time when they are most likely to drop out of school. These classes have proven a Godsend to thousands of children in our schools.

In some schools the plan has been followed of forming *plus* classes, so-called, by placing in the hands of a strong and enthusiastic teacher the brighter pupils of the regular promotions with the hold-overs of the grade. The class remains with the teacher for a full year, and is able to cover three terms' work in two terms. This is working admirably in many of the schools. In some cities the plan of placing two separate grades in each classroom has been tried in order to secure group teaching.

SUGGESTIVE PROGRAMS

The following are suggestive programs for teachers who are considering the advisability of making two groups in some of their class work. It should be clearly understood that a program is a variable quantity and may be amended at frequent intervals.

Time	Length	Primary Grades	Divisions	
			A	B
9:00	15	Opening Exercises	—	—
9:15	20	Writing	—	—
9:35	15	Arithmetic A	—	X
9:50	15	Arithmetic B	X	—
10:05	15	Composition	—	—
10:20	20	Recess and Phy. Trg.	—	—
10:40	20	Reading A	—	X
11:00	20	Reading B	X	—
11:20	30	Drawing, Sewing and Constructive Work	—	—

11:50	10	Music	—	—
12:00	—	INTERMISSION	—	—
1:00	20	Reading A	—	X
1:20	25	Nature Study	—	—
1:45	15	Composition	—	—
2:00	20	Recess and Phy. Trg.	—	—
2:20	10	Drawing and Constructive Work	—	—
2:30	20	Reading B	X	—
2:50	10	General Exercises	—	—
3:00	—	DISMISSION	—	—

Time	Length	Grammar Grades	Divisions	
			A	B
9:00	15	Opening Exercises	—	—
9:15	15	Study	X	X
9:30	10	Arithmetic (Mental)	—	—
9:40	15	Arithmetic (Written)	A	X
9:55	15	Grammar	—	—
10:10	15	Writing	—	—
10:25	10	Recess and Phys. Trg.	—	—
10:35	15	Arithmetic B	X	—
10:50	15	Reading A	—	X
11:05	15	Reading B	X	—
11:20	40	Drawing and Constructive Work	—	—
12:00	50	INTERMISSION	—	—
1:00	15	Study	X	X
1:15	25	Composition	—	—
1:40	25	Geog. or History A	—	A
2:05	10	Phys. Training	—	—
2:15	25	Geog. or History B	X	A
2:40	10	Spelling	—	—
2:50	10	Music	—	—
3:00	—	DISMISSION	—	—

Note: X is a study period for the divisions indicated.

Mr. Long and Red Riding Hood

The horrible story of Red Riding Hood is not known among the Indians, who know well how untrue the tale is to wolf nature, and how foolish it is to frighten children with false stories of wolves and bears, misrepresenting them as savage and bloodthirsty brutes, when in truth they are but shy, peace-loving animals, whose only motive toward man, except when crazed by wounds or hunger, is one of childish curiosity. All these ferocious animal stories have their origin in other centuries and in distant lands, where they may possibly have been true, but more probably are just as false to animal nature; for they seem to reflect not the shy animal that men glimpsed in the woods, but rather the boastings of some hunter, who always magnifies his own praise by increasing the ferocity of the game he has killed, or else the pure imagination of some ancient nurse who tried to increase her scant authority by frightening her children with terrible tales. Here certainly the Indian attitude of kinship, gained by long centuries of living near to the animals and watching them closely, comes nearer to the truth of things.

—WILLIAM J. LONG, in "Northern Trails."

And Little Red Riding Hood never did have anything to do with a real wolf! The story is one of the old folk-lore myths of day and night. Day, represented by the little golden-haired maiden with the hood or sun-rise glow of bright red, is swallowed up after the hours of her journey have passed, by the dark, ferocious wolf of night.

We will enjoy Mr. Long, but we won't let him spoil for us our precious contributions, handed down from forgotten ages, such as "Little Red Riding Hood," will we?

New York.

C. S. G.

Memory Gems for Grammar Grades

(Saturdays and Sundays omitted)

The quotations given below can be used in connection with the Arbor Day celebration if desired.

For a relic is he, the gnarl'd old tree,
Of the times of the good and brave.

MARCH 1

Cedar, and pine, and fir, and branching palm,
A sylvan scene! and as the ranks ascend,
Shade above shade, a woody theater
Of stateliest view.

—MILTON.

MARCH 2

Give fools their gold and knaves their power,

Let fortune's
bubbles
rise and
fall;

Who sows a
field, or
trains a
flower,
Or plants a
tree, is
more than
all.

For he who
blesses
most is
blest;

And God
and man
shall own
his worth,
Who toils to
leave as
his be-
quest.

An added
beauty to
the earth.

—WHITTIER.

MARCH 3

Who does his
duty is a
question
Too complex
to be solv-
ed by me;
But he, I ven-
ture the
sugges-
tion,

Does part of
his, that
plants a tree.

MARCH 4

Let dead names be eternized by dead stone,
Whose substance time cannot increase or mar;
Let living names by living shafts be known,
That feel the influence of sun and star.
Plant thou a tree, whose griefless leaves shall sing
Thy deed and thee, each fresh unfolding spring.

—EDITH M. THOMAS.

MARCH 5

Then hail to the Elm! the green-topped Elm!
And long may his branches wave,

MARCH 8

He plants trees who loves others besides him-
self.

MARCH 9

Behold the trees unnumbered rise,
Beautiful, in various dyes;
The gloomy pine, the poplar blue,
The yellow beech, the somber yew,
The slender fir that taper grows,

The sturdy
oak with
broad-
spread
boughs.

MARCH 10

O for a seat
in some
poetic
nook,

Just hid with
trees and
spark-
ling with
a brook!

LEIGH HUNT.

MARCH 11

The birch, the
myrtle
and the
bay

Like friends
did all
embrace;
And their
large
branches
did dis-
play

To canopy
the place.
—DRYDEN.

MARCH 12

When our
wide woods
and mighty
lawns

Bloom to the
April skies,

The earth has no more gorgeous sight
To show to human eyes.

—BRYANT.

MARCH 15

What should I tell you more of it?
There are so many trees yet,
That I should all encumbered be,
Ere I had reckoned every tree.

—CHAUCER.

MARCH 16

It never rains roses; when we want—
To have more roses we must plant more trees.

—GEORGE ELIOT.



Blackboard Calendar, Designed by Anna Eastham

MARCH 17

Various the trees and passing foliage here,—
Wild pear, and oak, and dusky juniper,
White briony between in trails of light,
And ivy, and the suckle's streaky light,
And moss, warm, gleaming with a sudden mark,
Like growths of sunshine left upon the bark;
And still the pine, flat-topp'd, and dark and tall,
In lordly right predominant over all.

—LEIGH HUNT.

MARCH 18

Then rears the ash his airy crest,
Then shines the birch in silver rest,
And the beech in glistening leaves is drest,
And dark between shows the oak's proud breast,
Like a chieftain's frowning tower.

—SCOTT.

MARCH 19

I sit where the leaves of the maple,
And the gnarl'd and knotted gum,
Are circling and drifting around me,
And think of the time to come.

—ALICE CARY.

MARCH 22

No tree in all the grove but has its charms,
Tho each its line peculiar.

—COWPER.

MARCH 23

Now blossom all the trees, and all the fields
And all the woods their pomp of foliage wear,
And nature's fairest robe adorns the blossoming
year.

—BEATTIE.

MARCH 24

Under the shady roof
Of branching elm star-proof.

—MILTON.

MARCH 25

O hemlock tree! O hemlock tree! how faithful
are thy branches!
Green not alone in summer time,
But in the winter's frost and rime!
O hemlock tree! O hemlock tree! how faithful
are thy branches.

—From the German.

MARCH 26

Plant the crab where you will, it will never bear
pippins.

MARCH 29

Our ships were British oak,
And hearts of oak our men.

—ARNOLD.

MARCH 30

Welcome, ye shades! ye bowery thickets hail!
Ye lofty Pines! ye venerable Oaks!
Ye Ashes wild! resounding o'er the steep!
Delicious is your shelter to the soul.

—THOMSON.

MARCH 31

Under the yaller pines I house,
When sunshine makes them all sweet scented,
An' hear among their furry boughs
The baskin' west wind purr contented.

—LOWELL, "Biglow Papers."

Joan D'Arc

(Joan of Arc was a simple peasant of Domremy, France, born in 1412. She was about thirteen years old when she learned the miseries of her country, and professed to hear unearthly voices calling her to the aid of the distressed dauphin. She assumed the dress and weapons of a soldier and at the head of an army inspired fresh enthusiasm and courage. After many conflicts, and some successes she was taken prisoner by the English and burned at the stake, at Rouen, May 30, 1431, as a sorceress and heretic.)

So many stars in heaven,—

Flowers in the meadow that shine;

This little one of Domremy,

What special grace is thine?

By the fairy beech and the fountain

What but a child with thy brothers?

Among the maids of the valley

Art more than one among others?

Chosen darling of heaven,

Yet at heart wast only a child!

And for thee the wild things of Nature

Set aside their nature wild:

The brown-eyed fawn of the forest

Came silently glancing upon thee;

The squirrel slipped down from the fir,

And nestled his gentleness on thee.

Angelus bell and Ave,—

Like voices they follow the maid

As she follows the sheep in the valley

From the dawn to the folding shade:—

For the world that we cannot see

Is the world of her earthly seeing;

From the air of the hills of God

She draws her breath and her being.

Dances by beech-tree and fountain,

They know her no longer:—apart

Sitting with thought and with vision

In the silent shrine of the heart;

And a voice henceforth and forever

Within, without her, is sighing,

"Pity for France, O pity,

France the beloved, the dying!"

And now between church-wall and cottage

Who comes in the blinding light,

Rainbow plumes and armor,

Face as the sun in his height,

"Angel that pierced the red Dragon,

Pity for France, O pity!

Holy one, thou shalt save her,

Vineyard and village and city!"

Poor, sweet child of Domremy,

In thine innocence only strong,

Thou seest not the treason before thee,

The gibe and the curse of the throng;

The furnace pile in the market

That licks out its flames to take thee;—

For He who loves thee in heaven

On earth will not forsake thee!

Poor, sweet maid of Domremy,

In thine innocence secure,

Heed not what men say of thee,

The buffoon and his jest impure!

Nor care if thy name, young martyr,

Be the star of thy country's story:—

'Mid the white-robed host of the heavens

Thou hast more than glory!

—PALGRAVE.

Patriots' Day, April 19

The 18th of April '75

A dialog for six boys.

By GEOFFREY F. MORGAN, California

Scene.—A room. Table in center with candles burning. Father, wearing spectacles, reads Almanac. Boys work on slates, or read, some at table, others on stools or floor. Costumes are an improvement, but not necessary. The noise of galloping horse may be done with two blocks of wood on table top. Paul Revere must *shout*, not talk.

Characters.—Paul Revere, Father, John, William, Henry, Arthur.

William (working with slate).—Oh, it's no use. I can't do these problems.

John (shutting book).—No, and I can't learn this geography, either.

Father.—I'm afraid you're not either of you trying very hard, are you?

William.—I can't keep my mind on them for two minutes together. There's so much else to think about.

Henry.—Do you think the British mean to fight us, father? I heard Hiram Green talking today. He said that all the minute-men were drilling every night.

Arthur.—Yes, and you know they've got a whole lot of powder and shot stored at Lexington and Concord, so they'll be able—

John.—Sh-sh-h! You mustn't say it so loud. You know there is certain to be trouble if the British find it out.

Arthur (glancing round).—I guess there are none listening around here now. Anyway, I hope not.

Father.—I'm afraid it's coming, boys. I saw Elder Gordon today. He tells me that all the countryside is ready for war. It is plain the British expect it, too, for General Gage is bringing more troops into Boston every day.

William.—I heard today that the British were going to try and seize the stores our men have been gathering together.

Henry.—If they do it'll mean trouble all right. Our boys will fight, sooner than give them up.

John.—Well, I hope so. We'll all get a chance to take a shot at the red-coats before we're thru.

Father.—But come, boys, we mustn't let the possibility of war interfere with the certainty of lessons. Get them done, for it's past bedtime already.

William.—All right. Here goes for the arithmetic. "If 4 men dig 8 yards in 2 days, how many men will it take to dig 18 yards in 5 days?" I don't know. I never could do these old rule-of-three problems, anyway.

Arthur.—Oh, that's easy. Let me show you. (They work.)

Noise heard outside of galloping horse, gradually coming nearer.

Father.—Who can that be, riding so late, and at such a pace?

All rise.

Henry.—Listen! He's coming straight down the road. He's going past! No, he's pulling up. Listen!

Paul (outside knocking).—Ho, within, there.

Father.—Who's there?

Paul (outside).—'Tis I, Paul Revere. Awake, awake. The British are coming.

All.—What's that? The British coming?

Paul (outside).—They are marching tonight to destroy the stores at Lexington and Concord. I am riding ahead to call out the minute-men. Arm, arm, and come out to fight them. Make haste. I must go.

Horse gallops away, noise growing fainter.

Father.—It has come at last, boys. This means war. The British will force us to fight for our rights, and we will resist oppression to the death. Come, help me to prepare the muskets and pistols, for tonight we fight for Liberty.

French School Canteines

In reporting that school canteines were opened in Nantes in November, according to a recent vote of the municipal council of that French city, Consul Louis Goldschmidt describes their operations:

These canteines are installed in each non-sectarian (public) school and are intended to furnish poor children with hot and nourishing food. In one of the rooms of the school there is a refectory where the meal takes place. At five minutes to 11 the children get out of their classes. They go into the courtyard, where, under the vigilant care of one of the schoolmasters, they wash their hands at the wash-stands. Then at 11 o'clock they place themselves in regular order and walk into the refectory.

Each child, before entering this room, gives a check to the master. This check is given to the poorer children in an unobserved manner and without charge, and is sold at 15 centimes (3 cents) to the scholars whose parents are more able to pay. Thus the children's pride is not hurt, there being no difference between the one who pays and the one who does not.

The meal lasts three-fourths of an hour. Two of the older children are appointed to watch over the younger and see that they all secure their food. One of the masters also superintends the meals. The weekly bill of fare has been arranged as follows:

Monday: Cabbage soup; sausage and beans.

Tuesday: Bean soup; stew; jam.

Wednesday: Meat soup; rice; pie.

Thursday: No school takes place.

Friday: Vegetable soup; codfish; rice.

Saturday: Meat soup; sausages or blood pudding; beans.

In addition each child receives half a pint of wine mixed with water. The food is cooked in the municipal free soup houses, called Fourneaux Municipaux. From there it is brought to the schools, where, if necessary, it is heated again before being served to the children.

In one of the schools on the first day 112 scholars were present, and a large number has since partaken of the meals. The school canteines are useful and humanitarian, will certainly tend to the betterment of the poorer classes, and will no doubt help in securing better educational results.

Bible Readings for the School Year

I.
Prov. 3: 1-7, 13-20.
Psalm 3.
Luke 14: 7-11.
Psalm 1; Psalm 15: 1-5.
St. Matt. 6: 5-15.

II.
Prov. 2: 1-11.
Psalm 2: 1-8.
Psalm 84.
Psalm 29.
Luke 15: 10-15, 17-24.

III.
Prov. 19: 16-29.
Psalm 39.
1 Cor. 13.
Psalm 8.
Matt. 5: 3-12.

IV.
Prov. 20: 1, 3-7, 9-13,
15.
Psalm 146.
1 Tim. 6: 6-12.
Psalm 34: 1-22.
Matt. 5: 43-48.
Matt. 9: 10-13.

V.
Prov. 23 (selected
verses).
Psalm 148.
Exodus 20: 3-17.
Psalm 23.
Matt. 7: 24-27.

VI.
Prov. 4: 1-13.
Psalm 143: 1-11.
Isaiah 55.
Psalm 24.
Matt. 6: 1-4, 19-24.

VII.
Prov. 4: 14-27.
Psalm 139.
Job 37: 5-23.
Psalm 26.
Luke 14: 12-24.

VIII.
Prov. 6: 16-23.
Psalm 116: 1-15.
Rom. 12: 8-21.
Psalm 121: 1-8; Psalm
71: 1-5.
Matt. 18: 15-17, 21-22.

IX.
Prov. 6: 6-15.
Psalm 118 (selected
verses).
Eccl. 11: 1-4, 6-10.
Psalm 19: 1-14.
Luke 12: 13-21.

X.
Prov. 8: 1-19.
Psalm 37: 23-40.
Job 28: 1-11.
Psalm 111: 1-10.

The Bible readings given below were selected for the opening exercises of school sessions. They were prepared for the *Philadelphia Teacher*, with a view to economizing teachers' time in research for appropriate readings. Mr. A. V. Sayre, of the Blaine School, Philadelphia, who selected the readings, has chosen passages that are suited to all classes of pupils, whatever their religious belief may be. The readings are planned to cover the school days for the entire year of thirty-six weeks, five selections being given for each week.

Psalm 67: 1-7.
Matt. 18: 23-35.

XI.
Prov. 8: 17-36.
Psalm 103: 1-22.
Job 28: 12-28.
Psalm 65: 1-13.
Matt. 7: 1-14.

XII.
Prov. 11: 1-12, 14-20, 27,
28.
Psalm 101: 1-8.
Eccl. 12: 1-7, 13, 14.
1 Chron. 16: 23-36.
Luke 14: 7-14.

XIII.
Prov. 10: 1-5, 8, 9, 14-17,
18, 20.
Prov. 12: 19-22.
Psalm 95: 1-7.
Isaiah 40: 3-17.
Psalm 119: 1-16.
Matt. 19: 16-26.

XIV.
Prov. 15: 1-10.
Psalm 96: 1-13.
Job 5: 6-23, 26.
Psalm 119: 97-105, 113-
117.
Luke 8: 4-15.

XV.
Prov. 15: 16-33.
Psalm 91: 1-16.
Isaiah 40: 21-31.
Psalm 112: 1-10.
Matt. 20: 1-16.

XVI.
Prov. 26: 12-21.
Psalm 51: 1-19.
Prov. 5.
Psalm 63: 1-11.
Luke 10: 25-37.

XVII.
Prov. 22: 1-6, 9-12, 29.
Psalm 3: 1-8.
Rom. 13: 1-10.
Psalm 145: 1-21.
Matt. 25: 14-29.

XVIII.
Prov. 14: 23-34.
Psalm 90.
Lev. 19: 3-4, 11-18.

Psalm 147: 1, 3-9, 11-18.
Eccl. 3: 1-15.

XIX.
Prov. 3: 1-7, 13-20.
Psalm 90: 1-17.
Isaiah 55.
Psalm 34: 1-22.
St. Matt. 6: 5-15.

XX.
Gen. 37: 3-14.
Gen. 37: 15-24.
Gen. 37: 25-36.
Gen. 39: 1.
Gen. 41: 1-16.
Gen. 41: 17-38.

XXI.
Gen. 41: 38-45, 46-49,
53-57.
Gen. 42: 3-20.
Gen. 45: 1-11, 25-28.
Gen. 46: 1, 6, 7.
Gen. 47: 1, 5-12.
Gen. 47: 27-31.
Gen. 50: 15-26.

XXII.
Prov. 4: 14-27.
Psalm 33: 1-22.
Job 38 (selected verses).
Psalm 17: 1-13.
Deut. 5: 6-15.

XXIII.
Prov. 8: 1-19.
Psalm 1.
Psalm 15: 1-15.
Psalm 51: 1-19.
Psalm 72: 1-14, 18, 19.
Galatians 6: 1-9.

XXIV.
Prov. 8: 17-36.
Psalm 8: 1-9.
Psalm 142: 1-7.
Psalm 28: 1-9.
James 3: 2-12.

XXV.
Prov. 6: 16-23.
Psalm 46.
Isaiah 2: 2-4.
Matt. 22: 15-22, 37-40.
Psalm 27: 1-14.
Mark 4: 2-20.

XXVI.
Prov. 6: 6-15.
Psalm 42: 1-11.
Psalm 104.

Lev. 19: 3, 4, 11-18.
Matt. 12: 33-37.
Matt. 6: 19-21.

XXVII.
Prov. 12: 1-13.
Psalm 98: 1-9.
Prov. 22: 1-12.
Psalm 96: 1-13.
Deut. 15: 7-11.
Deut. 24: 14, 15.

XXVIII.
Prov. 13: 1-7, 12, 13, 15,
18-20.
Psalm 51: 1-19.
Prov. 1: 7-19.
Psalm 25: 1-22.
Matt. 13: 24-33.

XXIX.
Prov. 8: 1-19.
Psalm 101: 1-8.
James 1: 17-27.
Psalm 26: 1-12.
Luke 12: 13-21.

XXX.
Prov. 12: 14-28.
Psalm 91: 1-16.
Job 28: 12-28.
Psalm 119: 29-40.
Luke 15: 11-32.

XXXI.
Prov. 15: 1-10.
Psalm 62: 1-12.
Rom. 12: 8-21.
Psalm 39: 1-13.
Luke 6: 41-45.

XXXII.
Prov. 16: 1-8, 16-20.
Psalm 90: 1-17.
Luke 10: 25-37.
Psalm 1.
Psalm 15: 1-5.
Eccl. 1-4, 6-10.

XXXIII.
Prov. 27: 1-12.
Psalm 103: 1-22.
Ezek. 33: 8-19.
Psalm 147: 1, 3-9, 11-18.
Matt. 5: 21-26, 33-37.

XXXIV.
Prov. 16: 16-32.
Psalm 37: 3-11.
1 Cor. 13.
Psalm 19: 1-14.
Exodus 20: 3-17.

XXXV.
Prov. 15: 1-10, 32, 33.
Psalm 103: 1-22.
Isaiah 55.
Psalm 24: 1-10.
Matt. 5: 3-12.

XXXVI.
Prov. 22: 1-6, 9-12, 29.
Psalm 146: 1-10.
Luke 6: 43-49.

Practical Nature Study

By FRANK OWEN PAYNE

So much is being said and done nowadays about making school work practical, so much of what we were taught to consider essential is being left out of the courses of study to make place for other things, that the teacher of twenty years ago would scarcely be able to find himself if he were to drop into almost any school of the present day.

The craze for the practical, the utilitarian, has taken full possession of many of our educators, and every branch of study must be subjected to its share of criticism, and be judged as to its bearing upon the practical work of the pupil after leaving school.

What is practical is not always easy to decide. The judgment of people as to the value of any subject will depend largely on the viewpoint taken.

If the point of view be the *home* or the *business* side of the subject it will be necessarily a one-sided and narrow view. If, on the contrary, it be the viewpoint of the outlook on life or on culture, many subjects come in as of practical value which from the strictly business or commercial side can never be so considered.

Thinkers will never agree. The element of personal preference always enters largely into any consideration of this kind. The only safe path is the *via media*, where one may cling to as much of the theoretical as possible and yet reach out toward the practical and endeavor to bring both extremes together.

No subject of the school possesses greater possibilities in this way than nature study. It may be, and in the past it has been, an attempt to train the observing powers. It has not attempted to be practical in any but the broadest sense. It has appealed to the esthetic side of the child—perhaps. Its educative value, like that of any other subject, consists of two things (1) culture and (2) information. But the latter should be incidental, while the former is the real end sought.

No one, not even the boldest champion of the nature-study movement, will place it in the forefront of practical subjects in the curriculum, by the side of arithmetic or grammar, for example. And yet nature can be made intensely practical, and in some places the most practical subject taught. Its content must necessarily vary with the nature of the school and the environment of the pupil. That nature study which demands access to the fields and woods is the right sort for rural and village schools. But let us not despise the window garden and the laboratory, for thus only can the city child secure that contact with nature which is general rather than specific. It is a principle as old as Comenius that what is at hand should be studied first, then that which is more remote. Agriculture in a city school is absurd.

Fifteen years ago nature study was a great fad. It swept over the entire country and was given a leading place in educational journals and on institute platforms. The writer was called to lecture in five different states. The nature-study movement was a craze. What manifold sins were committed in its name!

The fad died. It deserved to die, but it left a legacy of much value to educational thought and practice. It is still taught, but in a saner way. It deserves to be taught more generally. But it

will become of vastly greater value if it can be made more practical.

The presentation of important economic material for educational use offers a very excellent field for endeavor. This is the province of the new nature study, but too much cannot be said in warning as to what material shall be presented. Too much cannot be said against mere book study and memory work. Such work is not nature study at all. The market is flooded with books about nature. We must never lose sight of the fact that nature study deals with *things* and not with books. It is the actual contact with nature, whether in wood or field or laboratory, and the correlation of eye and hand that trains the mind.

In short, nature study, to become truly practical, must connect with the actual business of daily life.

It shall be the purpose of these articles to point out some subjects and suggest some methods which I trust will prove practical everywhere, and particularly so in rural districts where knowledge of nature and nature's laws is of prime importance.

The gross ignorance of the average city boy and girl concerning the most commonplace facts of nature is sad, and their utter indifference to such facts is appalling.

In New York City the pupil has an immense apperceptive mass, such as it is. The skyscraper towering aloft, the elevated railroad roaring overhead, the subway thundering beneath, the great bridges and the thronged thoroughfares, all contribute to make him alert, wonderfully alert. But his apperceptive mass ends here. What can he be expected to know of hills and valleys, of green fields and babbling brooks?

His horizon is woefully circumscribed. From his bedroom window, if his bedroom have a window, his eye surveys a dingy court with countless clothes-lines hung with the product of a hundred wash-tubs in various stages of uncleanness and dilapidation. No song of lark delights his ears. He hears the rumble of the trolley and the penetrating cry of the huxter.

In my own experience I have found scores of youngsters who had never gone a-fishing, dozens who had never been on a farm and very many who had never visited the country. I have found boys who thought that melons are dug out of the ground, that cabbages and potatoes grow on trees, and on one occasion, on a Saturday outing, I found three boys who mistook a hop-toad for a grasshopper.

In considering the practical aspects of nature study the subject very properly divides itself into separate heads, as follows:

1. The Botanical aspect or plant study.
 1. Seeds as sources of food.
 2. Milling processes.
 3. Oils, flavors and seed extractives.
 4. Germination of seeds.
 5. Agricultural processes.
 6. Roots, especially those used for food.
 7. Stems used for food.
 8. Stem products—sugar—turpentine, etc.
 9. Forestry with special reference to its bearing on climate, drainage and materials of commerce.

10. Lumbering.
11. Grafting and budding.
12. Propagation by cuttings.
13. Textiles, source, preparation, tests, etc.
14. Plant breeding (explanation of sex).
15. Bacteria, relation to disease, fermentation, and canning industry.
16. Yeast. The manufacture of bread and beer.
17. Moulds and mildews.
18. Fungi, edible and poisonous forms not chosen on account of their morphological significance, but solely because of their economic value.

II. The Zoölogical aspect or animal study:

1. Fisheries and fish products.
2. Fish hatcheries (breeding).
3. Source, preparation and supply of sponges.
4. The oyster and the clam.
5. The starfish as an enemy of oysters.
6. Fish and game laws.
7. The lobster industry.
8. Reptiles, birds and mammals as sources of materials of commerce.
9. Insects harmful to man.
10. Insects useful to man, *i.e.*, the bee, silkworm.
11. Worms as makers of soil.
12. Worms harmful, such as tapeworms, liver flukes, trichina, etc.
13. Dairy processes.
14. Stock raising.
15. Poultry.
16. Leather, hides and furs.
17. Feathers.
18. Whaling industry.
19. Birds as destroyers of insects.

Many of the foregoing are not within the range of most schools. But these lists are offered as showing the practical attitude which nature study may assume if it be desired to make it practical in the economic sense.

III. The Physiological aspect or self-study:

1. Practical anatomy such as may be learned thru study of one's own body supplemented by material from the meat market and elsewhere.
2. Foods and enzymes, especially the values of various foods.
3. Hygiene of the body. This in itself is a subject worthy of years of study.
4. Emergency cases or what to do until the doctor arrives.
5. The various nutrients such as starch, grape-sugar, proteids and fats, and how to recognize them by simple chemical tests.
6. The element of nursing and the preparation of simple remedies and foods for the sick.

IV. The Chemical aspect:

1. The commonest chemical elements and an idea of what is meant by chemical changes.
2. Simple chemical tests for various common substances.
3. The chemistry of a candle and the phenomena of combustion.
4. Oxidation as seen in rusting of iron.
5. Familiar household reactions such as bleaching, dyeing, soap-making and the action of baking-powders.
6. Disinfectants and cleansing agents.
7. Familiar chemical processes such as paper-making, tanning, smelting and the

manufacture of coal gas, where these processes can be observed.

This enumeration might be prolonged indefinitely until it comprised the entire range of natural and physical sciences.

The writer has published a book on "Geographical Nature Studies" which has met with flattering success.

There will be many to object to this practical trend. They will tell us that the facts of nature ought to be presented for their own sake. Would that it might be so! But this is not the case. We are confronted with a condition. The schools demand the practical and unless nature study can be shown to be practical, it seems doomed to go.

The foregoing list of topics is practical. There are few who can object to them. The layman will acknowledge their bearing upon the problems of every-day life, and the scientist can see in them a means of inculcating many of the fundamental facts of scientific learning.

In succeeding contributions, it is proposed to present typical lessons illustrative of many of these topics, hoping that they may be helpful to teachers who desire to give a practical trend to their work in nature study.

Composition Outline on Marble

By LILLIAN C. FLINT, Minnesota

I. DESCRIPTION.

The term marble is applied to any limestone capable of taking a high polish. Other stones polished and used for decoration are loosely called marble. Some marble under the microscope shows each grain as an imperfect crystal. Some marbles are streaked and mixed with green and red, making them valuable for ornamentation.

II. ORIGIN.

It is probably due to heat and pressure. The geologic age is in some dispute among authorities.

III. VARIETIES.

Purest varieties are of a snow-white color.

Carrara marble from Italy is used to-day by the best sculptors.

Among the statuary marbles of which the ancient Greeks made their statues were the Pendelic and Pavia marbles. Venus de Medici was made from these marbles.

The alabaster of the ancients was a product similar to marble.

Some of the ancient quarries were worked by the light of a lamp.

IV. USE AND LOCALITY.

One of the most useful marbles is the black which is used for chimney-pieces, vases and ornamental objects. The black color is due to bituminous matter.

White marble is extensively used for public buildings, for ornamentation both outside and inside in combination with other stones, and also in certain cities for stepping-stones.

America possesses valuable deposits of this in the Eastern States, and these, as well as those in Europe, are extensively worked.

Central New York yields a bird's-eye marble; black marble comes from Vermont and New York.

Mathematics As a Live Interest

By ANNA GILLINGHAM, for Two Years a Teacher of Mathematics in the Ethical Culture School, New York

However much the children may love their school, and however much their teachers may be their friends, still it is a little hard for many of them to believe that teachers are not somewhat different from men and women outside the school door. Hence, if these different beings manifest a wholesome regard for such vitally important matters as races, baseball scores and railroad trains, the small boys who sit in judgment upon them decide that despite the incomprehensible elements in their taste, they are nevertheless not hopeless. When we urge the study of some topic that seems absurdly dry and useless for a boy to trouble his head about, our same keen critic decides that people who have shown discernment once, may be doing so again, and that he would better let his faith carry him over the unintelligible gap.

It is not always flattering, but it is a wholesome experience all round when one has said, "Now let us take Columbus and some of the other men that you have been studying about in history and see whether we can get any mathematics out of the facts in their lives," and the class smile up at you in pleased surprise, "Oh, you know about them too?" In only a trifle less flattering connection the above remark has been made a number of times. It arises not so much from a belief in our ignorance of all save our own line, as from the supposition of our narrowness of interest, that we are too much immersed in our own subject to have any time or thought for the affairs of our fellow teachers, or for those of our pupils except when preparing our assignments.

I knew that in a certain grade there had been great enthusiasm in keeping the daily scores from a series of written spelling reviews. When I suggested our using these scores in the mathematics class, much pleasure was manifested at the discovery that I knew of this other interest of theirs.

By the way, it is often worth while to take some of the men uppermost in the history lessons, and from their principal dates calculate ages, contemporaries, age at which important acts were performed, and so forth. The subject which subserves the purposes of mathematics better than does any other of the elementary grades is geography. The projects suggested by it are more systematic and hence their exposition easier than any thus far given.

A class which had been studying about primitive conditions in this country, as a foundation for understanding the specialized modern industries of their later course, was shown a very tiny model of an old-fashioned quilting frame made by the teacher.

Towards the end of the year a little girl left the class to go to Europe and the other children wanted to make her a doll quilt. The little frame was found to be too small and a new one "twice as large" was necessary. The measurements of the small frame were carefully taken by the children, doubled in class orally, and written down by all in neat plain form.

SMALL FRAME

2 pieces 8 in. by $\frac{3}{4}$ in. by $\frac{1}{2}$ in.
2 pieces 18 in. by $\frac{3}{8}$ in. diameter.

6 pieces $5\frac{1}{2}$ in. by $\frac{1}{4}$ in. diameter.
4 pieces 2 in. by $\frac{1}{8}$ in. diameter.

FRAME TWICE AS LARGE

2 pieces 16 in. by $1\frac{1}{2}$ in. by 1 in.
2 pieces 36 in. by $\frac{3}{4}$ in. diameter.
6 pieces 11 in. by $\frac{1}{2}$ in. diameter.
4 pieces 4 in. by $\frac{1}{4}$ in. diameter.

The order for the wood was written by the children and sent down to the shop. It allowed for spoiling some material in the making:

4 pieces 16 in. by $1\frac{1}{2}$ in. by 1 in.
1 piece 4 ft. by 1 in. by $\frac{1}{8}$ in.
4, $\frac{3}{4}$ in. dowels.
5, $\frac{1}{2}$ in. dowels.
1, $\frac{1}{4}$ in. dowel.

When the larger frame was finished and the two stood side by side, one of the children said: "The big frame looks more than twice as big as the little one."

He was reminded that each dimension had been doubled.

"I can't help it," he said; "it looks more than twice as big."

The small frame was then placed directly under the large one, and the children all saw that it would take eight small frames to fill the space occupied by the large one.

After this a two-inch cube and several inch cubes were brought, and the class saw that it took eight of the small to make one of the large. Then a three-inch cube was substituted for the two-inch cube, and after some random guessing it was seen by most, even before being taken to pieces, to be made up of twenty-seven inch cubes.

Next came the making of the quilt and the ribbon to bind it.

RIBBON

32 in. length of quilt.
24 in. width of quilt.

56 in. distance half way round.
 $2 \times 56 \text{ in.} = 112 \text{ in. perimeter.}$

3

36 in.) 112 in. 3 yd. 4 in.
108

4

Allow 5 in. to turn in, etc.
 $3 \text{ yd. } 9 \text{ in.} = 3 \text{ yd.} + \text{what part of yard?}$
 $3\frac{1}{4} \text{ yd.}$

This plunged us into a talk on parts of a yard commonly used in measuring goods, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{8}$, and the way in which store counters are frequently marked off.

COST OF QUILT

Cost to be divided among fourteen members:
\$.16, cost of 1 yd. of ribbon.

$3\frac{1}{4}$

48

4

\$.52 cost of $3\frac{1}{4}$ yds. of ribbon.

\$.52 cost of ribbon.
 \$.25 cost of 1 yd. percale.
 .15 cost of 1 yd. cambric.
 .15 cost of 1 roll of cotton batting.
 .09 cost of 1 spool sewing silk.

\$1.16 cost of quilt.
 \$.08 $\frac{1}{2}$, i.e., \$.09 cost for each child.

14) \$1.16
 1.12

4

Another class worked out a number of problems in connection with candle-making.

The measures of weight, if not new to all, were not familiar to any, and the scales were used for each operation.

4 $\frac{1}{4}$ lbs. tallow and pail.
 $\frac{1}{2}$ lb. pail.

3 $\frac{3}{4}$ lbs. tallow.

5 lbs. suet bought.
 3 $\frac{3}{4}$ lb. tallow left.

1 $\frac{1}{4}$ lb. waste.

3 $\frac{3}{4}$ lbs. tallow.
 $\frac{3}{4}$ lb. tallow left after making candles.

3 lbs. tallow used for candles.

On a fall excursion the class had gathered bayberries so as to see how they look growing, but were unable to secure enough to supply the needs of the class for making wax candles. Therefore more had to be ordered.

Nov. 20, 1905.

THE SISSON DRUG CO.,
 Hartford, Conn.

Gentlemen:

We are sending a post-office money order for \$1.13 for three pounds of bayberry wax.

Very truly yours,

THE THIRD GRADE.

1 $\frac{1}{2}$ lb. berries and measure.
 11 oz. measure.
 1 lb. = 16 oz.
 $\frac{1}{2}$ lb. = 8 oz.
 1 $\frac{1}{2}$ lb. = 16 oz. + 8 oz. = 24 oz.

24 oz. berries and measure.
 11 oz. measure.

13 oz. bayberries.

This work in actual weighing was followed by some drill in reduction:

1 lb. = 16 oz.
 2 lbs. = 32 oz.
 4 $\frac{1}{2}$ \times 16 oz. = 72 oz. in 4 $\frac{1}{2}$ lbs.

$\frac{1}{2}$ lb. = 8 oz.
 $\frac{1}{4}$ lb. = 4 oz. $\frac{1}{4}$ lb. = 4 oz.
 $\frac{1}{8}$ lb. = 2 oz. $\frac{3}{4}$ lb. = 3 \times 4 oz. = 12 oz.

Part of these candles were being made as Christmas gifts to be taken home by the children, and presented to parents or friends. Hence the cost had to be calculated:

10c. cost of 1 lb. tallow.
 5
 —
 50c. cost of 5 lbs. tallow.

1c. cost of 1 cake of wax.
 10c. cost of 10 cakes.
 50c. cost of tallow.
 10c. cost of wax.
 5c. cost of wicking.
 65c. cost of candles.

In "Robinson Crusoe" there is an excellent definite description of the building of a stockade for protection from unknown enemies. This not only yielded valuable work for the classroom, but afforded profitable incentive for the class excursion, to collect stakes and construct a miniature stockade.

Robinson Crusoe's plain was 200 yards long and 100 yards wide. On this plain he drew a semi-circle at the base of a steep cliff which formed its diameter. This semi-circle was 20 yards in diameter.

We found that the classroom was a little less than 10 yards long. The impossibility of making in the woods a fortification of this size or of



Photographed by Lewis W. Hine
 Robinson Crusoe Stockade

drawing a diagram of it introduced the necessity for scale.

The class suggested making our stockade 5, 3, 2, or 1 yard in semi-diameter. Each of these in turn was tried on the blackboard and 1 yard was agreed upon.

This was found to be $\frac{1}{10}$ as large as Robinson's, i.e., 10 yards to 1 yard, 10 feet to 1 foot, 10 inches to 1 inch.

If we could find a plain $\frac{1}{10}$ as large as Robinson's how long would it be?

$\frac{1}{10}$ of 200 yards = ? $\frac{1}{10}$ of 100 yards = ?

Robinson built a wall by driving a double row of stakes into the ground in this semi-circle. The stakes were driven in far enough to make them firm and 5 feet 6 inches remained above ground.

How long must the stakes have been?

Pupils measured 5 feet 6 inches above the floor to see how high it looked and decided that 2 feet would hold them firm.

5 ft. 6 in. above ground.
 2 ft. in the ground.

7 ft. 6 in. entire length of Robinson's stakes.

Then our stakes must be made $\frac{1}{10}$ of 7 ft. 6 in. This would be less than 1 ft., and to find the length exactly we must reduce the length of Crusoe's stakes to inches:

$$\begin{array}{r} 12 \text{ in.} = 1 \text{ ft.} \\ 7 \end{array}$$

$$\begin{array}{r} 84 \text{ in.} = 7 \text{ ft.} \\ 6 \text{ in.} \end{array}$$

$$90 \text{ in.} = 7 \text{ ft. } 6 \text{ in.}$$

The difficulty in this step led to imagining various lengths for Crusoe's stakes and reducing these to inches.

$$5 \text{ ft. } 4 \text{ in.} = \text{how many in.}?$$

$$9 \text{ ft. } 8 \text{ in.} = \text{how many in.}?$$

$$1/10 \text{ of } 90 \text{ in.} = 9 \text{ in. length of our stakes.}$$

$$1/10 \text{ of } 30 = ? \quad 1/10 \text{ of } 100 = ?$$

$$1/10 \text{ of } 750 = ?$$

How can you tell instantly what is $1/10$ of a number ending in 0?

Then followed practice with other fractions, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, etc.

Robinson Crusoe braced his wall with stakes 2 ft. 6 in. long. How long should our braces be?

$$2 \text{ ft. } 6 \text{ in.} = 30 \text{ in.}$$

$$1/10 \text{ of } 30 \text{ in.} = 3 \text{ in.}$$

The children began cutting the sticks at school. When a large pile had been cut they were laid around the circumference of the semi-circle. They went just half-way around, and these were found to be 50. Hence we needed 100 to go all the way around. Two rows of large stakes would require 200 stakes and 100 braces.

By the time we were ready for the excursion 97 large stakes were ready:

$$200 \text{ sticks needed.}$$

$$97 \text{ sticks made.}$$

$$103 \text{ sticks to be found in woods.}$$

$$32 \text{ children were going.}$$

$$3 \frac{7}{32} \text{ sticks per child.}$$

$$32)103 \text{ sticks.}$$

$$96$$

$$7$$

If each child found 3 sticks and then among them 7 more were found, there would be enough.

We already had made at school 87 small braces.

$$100 \text{ braces needed.}$$

$$87 \text{ braces made.}$$

$$13 \text{ braces to be found in woods.}$$

This was readily seen to be less than 1 stick per child.

The picture shows the small stockade after its completion.

After building the tiny one the children measured a semi-circle of the true dimensions, 20 yards in diameter and marked off the space with themselves as stakes, thus gaining an idea of the correct size.

Of course in reality manual training furnishes the most applications for mathematics, and those most obviously necessary. I often regret that we do not utilize these more fully, and wonder how much the mathematics teachers are to blame. It seems almost impossible to convert these into a genuine class interest when the boys do not share the experiences of the domestic science and art rooms, nor the girls those of the shop.

The problems which arise in these departments must be met and solved at once, before the business of the period can advance, and most work which might be deduced from it has to be abandoned. Such data dragged into the mathematics classroom would be just as artificial for half the class as any other material arbitrarily given, and they are frequently far less valuable in themselves than well-selected problems.

The following is a description of one piece of work which was thus undertaken by the entire class, as seeming important enough in itself to claim the attention of all, even tho it had no concrete bearing for the girls.

With a view to helping the boys in making sun-dials in manual work, circles, circumference, diameter, and radius were introduced. From this the class proceeded to draw quadrants and then divide them into degrees.

They found that a quadrant had 90° , and that

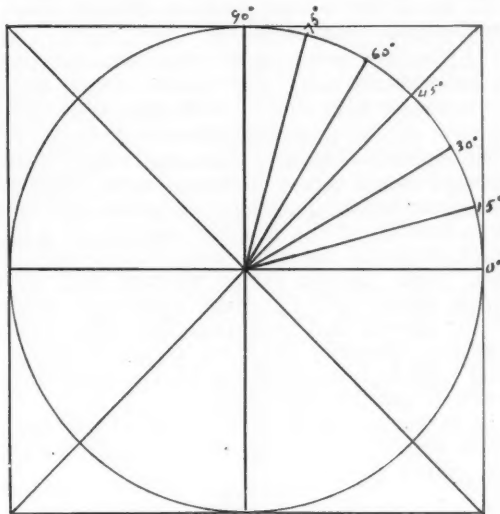


Diagram for Sun Dial

by drawing the diagonal of the square in which the quadrant was inscribed they had two angles of 45° each.

They had previously discovered that the radius of a circle was about $\frac{1}{6}$ the circumference, and it was not difficult to see that by setting the dividers as far apart as the length of the radius, the circumference could be divided into sixths. Hence an angle of 60° and by measuring up from 0° and down from 90° , 30° was found. From 30° to 45° is 15° , so the dividers were set at this angle.

Dinner plates and other circles were measured at home, the circumference being found to be rather more than three times the diameter. Three one-sevenths was given them and a number of circumferences were found for practice.

By a fortunate arrangement the same class had been using shadow sticks and studying about hours of sunrise and sunset in their nature study, and beginning systematic work with Denominate Numbers in their mathematics.

Hence for several days they looked up in an almanac the time of sunrise and sunset and calculated the length of the day.

Becoming interested in work with time and having for review the rhyme, "Thirty days hath September," etc., they spent some time on the length of the summer vacation, and the days between Christmas and Easter.

A Week with the Sixth Grade

Second Half Year

Monday

Morning Exercises.—A talk on March. Derivation of name? (From Mars, Roman god of war.) September means seventh month, October, eighth, November, ninth; why? (March used to be the first month of the year.) We say that spring comes March 21st; why? What makes day and night of equal length then? At what other time of year are day and night equal? How do the days preceding the spring equinox differ as regards length from those preceding the autumn equinox? Why?

ENGLISH

To teach that a dash shows a sudden break in the thought. For dictation:

When you know a thing, to hold that you know it; and when you do not know a thing, to allow that you do not know it,—this is knowledge.—CONFUCIUS.

GEOGRAPHY

Recitation.—France. Location: In Western Europe; Spain south, England west. Latitude, 45 degrees north; longitude, 5 degrees east. About three-fourths of the country consists of a plain which slopes to the west from a low central plateau. This plateau forms western wall of the Rhone valley. All the large rivers but one rise in the plateau and flow down the slope into the Atlantic. Describe the three largest rivers. Into what body of water does the Rhone empty? Navigation is possible far inland.

Seat Work.—Draw outline map of country, indicate locality of central plateau, and three largest rivers.

HISTORY

Recitation.—When was new President elected? (Tuesday following first Monday in November.) Who elected him? (The voting citizens of the United States.) How? (By voting for Presidential electors.) What electors did each voter vote for? (Those of his own state.) How many electors for each state? (As many as the number of representatives and senators.) How many would that be in your state? When do the electors cast their votes for President? (On the second Monday of January.) Where? (At the state capitol of their own state.)

The electors of each state make three copies of the result of their vote, seal them, and send one copy by mail to the President of the Senate at Washington, a second by special messenger to the same person, while the third is put into the hands of some specified officer of the district in which the election is held. On the second Wednesday of February both houses of Congress meet together to count the votes. The President of the Senate opens the returns, the votes are counted and he announces who has received a majority.

Seat Work.—Read about what is done on the Fourth of March to inaugurate the President. What special things are to be done this year?

MATHEMATICS

Problems.

- Express decimally and in per cent $\frac{3}{4}$, $\frac{5}{8}$, $2\frac{3}{4}$, $1\frac{1}{2}$.
- Can a man gain 150 per cent? Give an example. Can he lose 150 per cent? Give reason for your answer.

- What is the rate per cent when the gain is $\frac{1}{4}$ of the cost?
- When the gain and the cost are each \$60, give the selling price, the amount gained, the per cent of gain, the selling price in per cent.
- What number increased by 65 per cent. of itself equals 1,155?

—From School Work.

Tuesday

Morning Exercises.—Signs of spring. What indications of spring are there this morning? In the sky? Clouds? Time of sunrise? Bird songs? Warmth? Wind? Flowing of sap?

ENGLISH

Recitation.—Enunciation.

â as in fate, ale.

Pay, may, fame, they, obey, danger, break.—It may be my fate to win both fame and blame.—In vain to weigh his words.

â as in arm, far.

Ah, are, arm, calm, half, laugh, haunt, hearth.—Here it comes sparkling, and there it lies darkling.—To arms! To arms! Charge, Chester, charge!

a as in all, fall.

Awe, aught, fault, alway, lawyer, saucer, important.—He paused by the tall tree, as he saw the lawyer walking toward him.—Avoid saying *sor* for *saw*; *lor*, for *law*.

a as in and, fat.

At, and, mat, man, hand, began, attack, whack.—The bat was on the mat and the fat was in the pan.—The madman stood on the jag of a mountain crag.

â as in air, care.

Dare, bear, there, fair, heir, careful.—Oh, rare and happy pair! may you bear each other's joys and cares!—Forbear; her fairy fairness will ensnare.

à as in ask, fast.

Dance, chance, glass, past, mast, grass.—The slanting sun glanced on a merry dancing group.—Faster and faster it comes on the blast.

—From Holmes' Third Reader.

Seat Work.—From a paragraph in the reader, write in parallel columns all the words containing a. the words in which the vowel is pronounced alike in the same column.

GEOGRAPHY

Recitation.—Important cities of France—Paris, Lyons, Marseilles, Havre. What do you know about Paris? Lyons, famous for silks. Marseilles and Havre seaports. Climate—France is on windward side of Europe. The prevailing westerly storms distribute rain quite evenly over the country, supplying abundant moisture for agriculture. Summers warmer than in England. Southeastern section has semi-tropical climate, because of the warm Mediterranean waters, and the protection afforded by the Alps.

Seat Work.—Read about Paris. What noted buildings? How does the city compare in beauty with New York? How is city laid out?

HISTORY

Recitation.—The slavery question; history of slavery in the colonies and the nation up to 1820.

Seat Work.—Read about the abolitionists, William Lloyd Garrison, Julia Ward Howe, Lydia Maria Child, the poet Whittier, etc.

MATHEMATICS

Problems in Percentage.

1. \$1.54 equals $87\frac{1}{2}$ per cent of what amount?
2. I sold two horses for \$150 each. On one I gained 10 per cent, on the other I lost 10 per cent. Did I gain or lose on both, and how much?
3. A bill of goods amounts to \$480. Discounts of 25 per cent and 15 per cent are allowed. (a) Find the net amount and the discount. (b) Find to what single discount the above given discounts are equal.
4. How shall I mark goods costing \$350 so that a discount of 25 per cent may be allowed from the marked price and a profit of 20 per cent will still be made?
5. How many barrels of beef bought at \$5.50 per barrel and sold at $\$6\frac{1}{4}$ a barrel must I buy and sell to make a profit of \$123?

—From School Work.

Wednesday

Morning Exercises.—The Weather. What does the thermometer read this morning? Why does the thermometer go up as the air grows warmer and down as the air grows colder? (Explain the difference in pressure of air as it is more or less condensed.) What does this morning's paper say about the weather for today? Where does this report come from? (The Weather Bureau at Washington.) How does the Bureau determine what the weather in various parts of the country is going to be? (Explain how reports are sent in from all over the country of thermometer, barometer, rate and direction of wind, etc., and how from the combined reports the weather prospects are determined.)

ENGLISH

Recitation.—Use of quotation marks. For dictation:

"Land of song!" said the warrior bard,
 "Tho' all the world betray thee,
 One sword at least thy right shall guard,
 One faithful harp shall praise thee!"

—MOORE.

Seat Work.—Write, in the form of questions and answers, with proper use of quotation marks, what you and your friend talked about on the way to school this morning.

GEOGRAPHY

Recitation.—France. Products, industries, exports, imports, trade with United States.—France is an agricultural country. More than half the people live on farms. Wheat is most valuable cereal, oats next; rye and barley are grown on poorer soils. Sugar beets for making sugar and alcohol are raised on the plains in the northern part. France is the greatest grape-raising and wine-producing country in the world. In the lower Rhone valley the mulberry grows in large quantities. The silkworm flourishes there and large quantities of silk are made. Cattle-raising is carried on in the northwest and much butter and cheese are made. Coal and iron are found along the Belgian frontier, and some salt is mined. Fishing is a great industry.

France is fourth of the manufacturing nations

of the world, being surpassed only by the United States, Great Britain, and Germany. In manufacture of silks, linen and cotton goods France leads the world. Paris is the manufacturing center for jewelry and gloves. Paris is the largest city on the European continent.

The largest exports are small artistic goods, wine and textiles. The imports are food products and raw materials for manufacturing, such as wool, cotton, petroleum, etc.

Nearly half the trade of France is with the United Kingdom. About a tenth of her imports are received from the United States, while only 6 per cent of her exports are sent here.

The government is republican. The supreme power is with the legislative branch, which elects the President and controls the executive branch. How does this differ from the United States?

Seat Work.—Make a list of the articles you have seen that came from France. Read about the manufacture of silk.

HISTORY

Recitation.—The Missouri Compromise. The compromise of 1850. Kansas-Nebraska Bill.

Seat Work.—Read about how people lived between 1800 and 1850. How did they travel? How did they communicate with people at a distance? Were there railroads, steamboats? What important inventions were made in those years?

MATHEMATICS

Review Problems:

1. A store valued at \$6,000, with its contents at \$3,600, was insured for $\frac{3}{4}$ of its value at $\frac{1}{2}$ per cent. If entirely destroyed by fire, what was the total loss?
2. What is the cost to excavate a cellar 22 feet long, 20 feet wide and 6 feet deep at 30 cents per cubic yard?
3. Bought 16 bushels of cranberries at 10 cents a quart. How much did I spend?
4. How much will it cost to pave a street 60 feet wide, $\frac{1}{4}$ mile long, at 50 cents a square yard?
5. What will it cost to fill a bin whose dimensions are 6 feet 6 inches long, 4 feet wide, 3 feet 9 inches deep at 75 cents a bushel?

—From School Work.

Thursday

Morning Exercises.—Why we need a President. To see that the laws made by Congress are carried out, to represent the nation in our dealings with other countries, etc.

ENGLISH

Description of Millet's "Feeding the Hens." (Aim, to write a description of picture with proper unity of sentence and paragraph.) The following was written by a pupil in a New York City school:

This is a picture of a poor woman feeding her hens. At the foot of the door there sits a baby looking at the mother feeding the hens, and there I see a yard with a door and thru the door I see a country place with very beautiful trees and thru the door I see very many stumps. The artist lives in France. His name is Millet. The house is made of stone. At six o'clock in the morning the woman feeds her hens.

GEOGRAPHY

Recitation.—Spain. In what direction from France? What separates the two countries (Pyrenees mountains). Boundaries. Latitude. Longitude. Size as compared with your own state. Surface.—What mountains? General surface

a large plateau broken by ridges of nearly parallel mountains, the Sierra Nevada. (Name means snowy ridge.) What important rivers? With the exception of the Guadalquivir, most of the rivers are so broken by shallows and rapids as not to be navigable.

Cities.—Madrid, the capital. Has wide streets and one of the finest art galleries in the world. The royal palace is beautiful. Who is king? Lisbon, capital of Portugal, has a very fine harbor.

Seat Work.—What great artists lived in Spain? What and where is the palace of the Alhambra? What American author wrote about it? What happened in Lisbon in 1755?

HISTORY

Recitation.—John Brown; election of Lincoln in 1860; secession, 1861.

Seat Work.—Home life in the North, how different from home life in the South, in 1860.

MATHEMATICS

Problems.

1. A rancher, having 2,400 head of cattle, sold $8\frac{1}{4}$ per cent to a Chicago packer, $37\frac{1}{2}$ per cent to a St. Louis packer, and 2 per cent of the entire lot died. How many cattle had the rancher left?

2. A captain of a sinking vessel ordered the crew to throw overboard $33\frac{1}{3}$ per cent of the cargo. The men threw over 2,250 tons of merchandise. How many tons in the entire cargo? How many tons were left?

3. At what price did a landlord sell his house, costing \$32,500, when he gained 8 per cent?

4. Sold a coat for \$33.60, thereby losing 16 per cent. What was its cost?

5. A, B and C buy a farm. A pays \$8,700, B pays \$7,200, C pays \$4,100. What per cent of the purchase money does each furnish?

—From School Work.

Friday

Morning Exercises.—Self-respect as a basis for success. Unless one has respect for self, he will not win or keep the respect of others. Only one basis for self-respect—right living. Be so honest, so truthful, so kind, so helpful, that you will have nothing to conceal and so will not be ashamed to look any man in the eye.

ENGLISH

A letter to the teacher, telling what subject studied is liked best, and why. What subject studied is liked least, and why.

HISTORY

Recitation.—Beginning of the civil war. Battle of Bull Run.

Seat Work.—What facilities were there for fighting during the Civil War? What ammunition? What cannon and guns? What did the soldiers of the North wear? Of the South? What did soldiers carry with them on the march? What were they given as rations?

MATHEMATICS

Problems.

1. Find the amount of \$960 from Jan. 1, 1905, to Dec. 21, 1906, at 5 per cent.

2. A manufacturer sells a suit of clothes to a merchant at a profit of $12\frac{1}{2}$ per cent. The merchant sells it for \$12, making a profit of $33\frac{1}{3}$ per cent. How much did it cost the merchant? How much did it cost the manufacturer?

3. A man spends 20 per cent of his salary for living expenses, 12 per cent for clothing, 11 per

cent for incidentals. If he saves \$513, what is his salary?

4. I sold a horse for \$105, which was $87\frac{1}{2}$ per cent of what I paid for him. What per cent would I have gained if I had sold him for \$140?

5. Would you prefer 60 apples at the rate of three for a cent and sell them at two for a cent, or buy 60 apples at five for two cents and sell them at five for three cents? Give reason for your answer.

—From School Work.

Letters

A Lincoln School

Sir: A new public school building was recently completed in East Orange, N. J., but will not be dedicated to educational purposes until the twelfth of next February—the one hundredth anniversary of the birth of Abraham Lincoln. Survivors of the Union armies, with many others, have observed with deep interest the growing sentiment and commendable local patriotism which occasionally confers the name "Lincoln" upon a public school building in honor and grateful remembrance of a great American. At a recent informal meeting of a party of Civil War veterans this occasional and appropriate use of the name of Lincoln was recognized and commented upon with earnest expressions of appreciation and hope that the exception would be made the rule, and that beginning with the year 1909—the first Lincoln centenary—every hamlet, town and city under our national flag would have a public school building bearing the name "Lincoln."

Arlington, N. J.

ALFRED KING.

[This letter was referred to in the editorial on page 207 of THE SCHOOL JOURNAL for February.]

Teaching the Deaf

Editor THE SCHOOL JOURNAL:

The following is from a teacher of the deaf, in the front rank of his profession:

Ignorant as I am of things pedagogic, I cannot but feel that my friend strikes a note, much higher than the pedagogy of "pedagogicals," and that what he says must be very near the foundation of the best teaching, and that, therefore, it may interest you, and your readers.

"The teacher who feels that the deaf have possibilities practically equal to those of hearing children, accomplishes more for them. Of course, we all know that in the abstract the limitations of the deaf are more closely drawn than those of the hearing, but the teacher of the deaf is the last one in the world who ought to believe in these limitations. Every teacher ought to believe in the boundless possibilities of the children he is teaching. This belief puts him in a frame of mind which calls out the very best in each child in his charge. The tendency is for teachers of long experience to excuse themselves and their classes for their shortcomings because of the deafness of the children. When a teacher enters this frame of mind his work sinks to a lower level. The ideal situation is for the teacher to reap his experiences, profit by them, and still keep within himself the mind and heart of youth. Such a teacher never grows old, and his works do follow him."

Oakmont, Pa.

WILLIAM WADE.

Petroleum and Natural Gas in the U. S.

Mineral oils from drilled wells were first produced in the United States from "the first oil well," which was drilled by Col. E. L. Drake, in 1859, near Titusville, Pa. He used a wood derrick thirty-four feet high. (See illustration No. 1.)

During that year Pennsylvania and New York produced 2,000 barrels valued at \$32,000, and as the Pennsylvania product sold at \$20 a barrel, the New York production was not rated so high. With the exception of a few hundred barrels of lubricating oils produced in various parts of Pennsylvania, Ohio and elsewhere, which bring high prices, the "Pennsylvania grade" of light crude oil has always stood at the head of the list in values. Now the price is \$1.78, and during the year 1907 the average was almost that. The average for all the oils of the United States for 1907 was a fraction above 72 cents. The entire production of the country was 166,093,335 barrels, and the value \$120,106,749.

The total production during the life of the industry, from 1859 to and including 1907, is 1,806,608,463 barrels, having a total value of \$1,654,877,685.

In a geographical sense the history of the oil industry is interesting. Up to 1876, New York and Pennsylvania produced all the crude oil known, in 1874 almost 11,000,000 barrels, which fell below 9,000,000 in the centennial year. The two states reached their zenith of production in 1891 with 33,009,236, and since that year they have gradually and steadily declined, except that in 1896 there was a gain of about a million and

in 1905 and in 1906, but fell to 820,844 in 1907.

Colorado began to produce in 1887 with 76,295, reached more than 800,000, but shows only 331,851 now.

Indiana began in 1889 with 33,375 and Illinois with 1,400. The Hoosier State advanced past the eleven-million mark in 1904, but now has only 5,128,037 to her credit, while the Suckers who gradually declined to 200 barrels in 1902, lost their statistics in 1903-4, suddenly came to the front in 1905-6-7, and in the last-named year stood third in the list of states with 24,281,973 barrels.

The same year that initiated the lake states in oil brought in Kansas with 500 barrels, Texas with 48 and Missouri with 20. Kansas ranked Oklahoma, and separate figures were given till 1905, when statistics were combined, but in 1907 estimated returns taken from combined official figures show Oklahoma first with 44,300,149 barrels, Kansas, 1,633,500.

In 1905, Texas had reached 28,136,189 barrels, but she has declined to 12,322,696. Louisiana, however, sprang to the front in her initial year, 1902, with 548,617 barrels, reached 9,077,528 in 1906, and closed the record in 1907 with 5,000,221 barrels. Missouri began in 1891 with 30 barrels and has never passed the 5,000 mark; and Wyoming began in 1894 with 2,369, and has never reached 12,000, closing the report with 9,339.

This in detail is the showing of the states, except that Utah, Montana and Alaska have shown small production which has not entered the markets.

It will be seen by these statistics that Oklahoma stands first in production in barrels (42 gallons each), California second, Illinois third, Texas fourth, Ohio fifth, Pennsylvania sixth, West Virginia seventh and Indiana, Louisiana, Kansas, New York, Kentucky and Tennessee, Colorado, Wyoming, and Missouri in their order as stated.

PETROLEUM FIELDS

Geographically the oil-producing areas are grouped in fields, but for market purposes the oils are grouped by grades, such as "Pennsylvania grade," "Kansas grade," "Lima grade," etc.

The quality of the oil in one field differs from that in another. Some are rich in paraffin and are said to have a paraffin base, others have much asphalt and are said to have an asphalt base, while others have much sulphur and are said to have a sulphur base. The following table epitomizes the fields:

1. The Appalachian Field—Western slope Allegheny Mountains from western New York thru western Pennsylvania, eastern Ohio, western and central West Virginia, into Kentucky and Tennessee. Oil practically free from sulphur and asphalt, rich in paraffin wax. In 1907 price a fraction above \$1.74, now \$1.78.



The Oil-pumping Plant at Robinson, West Virginia

a half over the preceding year. For 1907, Pennsylvania produced 9,999,306 and New York 1,212,300 barrels, a total of 11,211,606.

In 1876, Ohio began with 31,763. She reached her maximum in 1896 with over 23,000,000, and came down in 1907 with 12,207,448 barrels. The same year West Virginia started with 120,000, reached 16,195,675 in 1900 and in 1907 produced only 9,095,296, a steady decrease since her greatest year. With these two states came California, giving only 12,000, which has grown to 39,748,375, second only to Oklahoma in barrels produced.

Kentucky and Tennessee came in with 4,755 barrels in 1883 and grew to more than a million

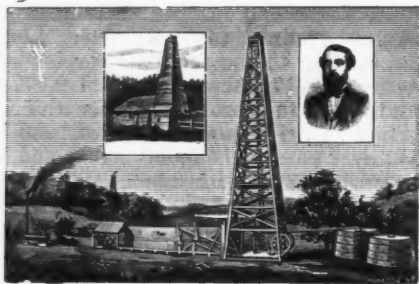
2. Lima-Indiana Field—Northwestern Ohio and a strip in middle of Indiana. Sulphur enough to require special treatment, also yields paraffin wax. Price 88 to 90 cents.

3. Illinois Field—Chiefly in southeastern Illinois. Less sulphur than Lima. Much of it refined without special treatment. Some contains both asphalt and paraffin. Price last year over 67 cents, now 68 cents.

4. Mid-Continent Field—Southwestern Kansas, Oklahoma and northern Texas. Great variety of grades. Many contain both asphalt and paraffin. Prices range from 21 to 45 cents.

5. Gulf Field—Geographically all oils of Texas and Louisiana, but northern Texas classed with Mid-continent oils because of the Corsican Texas oils being lighter and with less sulphur than those farther south. Many Texas oils have sulphur in form of sulphuretted hydrogen, which is easily removed by steam. Prices range from 65 cents on gulf fields to \$1.02 in Corsicana field.

6. California Field—Oils contain little or no paraffin, large percentage of asphalt, but some



The First Oil Well and a New Well

with portrait of Colonel Drake, who drilled the first well in 1858, near Titusville, Pa. The height of the derrick shown in the small picture of the old well was 34 feet. The height of the new derrick is 83 feet.

—Courtesy of Oil Well Supply Co.

sections produce higher grade oils. Prices range from 27 to 55 cents.

7. Other fields range in quality and price from the lowest to the highest.

NATURAL GAS

Almost every oil field produces more or less gas. Sometimes the gas and oil are found in the same rock and oil flows from the well, but the great gas wells do not have oil, while great oil wells often are marked by immense volumes of gas which throw the oil in large volume, sometimes in Pennsylvania and West Virginia amounting to several thousand barrels a day, and in Louisiana and Texas reaching tens of thousands of barrels a day.

The oil-bearing strata generally rise and fall, the sides of the slopes being known as the anticlinal and the apex of the slopes being known as the anticlinal axis. It is a demonstrated fact that as a rule the best gas wells are found on or near the anticlinal axis, the highest places of the strata, while in the lower places the driller is generally rewarded by a large supply of salt water, the strata valleys or synclinal troughs, as they are better known. Between the synclinal trough and the anticlinal axis is the oil man's land of promise, while the gas hunter seeks to find the higher points.

In addition to the oil fields mentioned, Alabama, Arkansas, South Dakota, North Dakota, and Oregon produce gas. Pennsylvania, Oklahoma, Louisiana and Kansas are the greatest producers. Wells in these states give from 40,000,000 to 50,000,000 cubic feet a day, while West Virginia and Texas have wells supplying from 10,000,000 to 30,000,000 cubic feet a day. These large wells are not the rule, and a well that produces a million feet a day is a good well, while in many parts of the country wells which produce from 50,000 to 100,000 cubic feet a day are rated as good property.

Because of the immense pipe-line systems that are in operation in Pennsylvania and West Virginia those states show the greatest production. The Standard Oil Company's lines (The Hope), three in number, one of them an 18-inch line, carry gas 200 miles from West Virginia to Cleveland, Ohio. The Philadelphia Company, the Carnegie Natural Gas Company and a number of other lines carry gas into Pittsburgh for domestic consumption and manufacturing purposes, the Carnegie Company supplying the great steel mills at Pittsburgh. From the remotest ends of these lines to Pittsburgh, by rail, the distance is more than 200 miles.

During the year 1907, Pennsylvania produced 135,516,015,000 cubic feet of natural gas. West Virginia followed with almost 123 billions, and Ohio with more than 52 billions, while Kansas leads the West with almost 75 billions. The reports to the United States Government show a grand total for 1907 of more than 404 billion cubic feet, or to be exact, 404,441,254 thousand cubic feet at an average value of 13.07 cents per thousand cubic feet.

Machinery and tools to carry on this work is supplied by large manufacturing concerns throughout the country. One of these is the Oil Well Supply Company, with headquarters at Pittsburgh, where it makes drilling tools. Another large factory at Oil City makes steam engines, gas engines, cast and malleable iron goods and drop-forge work. At Oswego, New York, they build boilers, and at various other points they have blacksmith and machine shops. In all parts of the field shops and stores are located.

By the courtesy of Mr. J. Smythe Mechling, the agent of the Oil Well Supply Company, at Clarksburg, we are able to present the illustration of the "Old" and the "New" ways of rigging up to drill an oil or gas well.

While on a trip to West Virginia, the editor of THE SCHOOL JOURNAL met Mr. Mechling, and the next day he had the pleasure of meeting the engineer in charge of the great electric oil-pumping plant at Robinson (Folsom, P. O.), Mr. W. F. Kaufman, who kindly furnished the cut showing the building in which are located the powerful engines and generators which pump more than 450 oil wells by electricity for the South Pennsylvania Oil Company, the producing branch of the Standard Oil Company in West Virginia.

THE SCHOOL JOURNAL is under obligations to Supt. W. A. Beer, of Clarksburg, for collecting data and views for this article. Superintendent Beer has always lived in the oil country of Pennsylvania and West Virginia, and gets his information at first hand. The statistics are from the United States Geological Survey.

Principal Commercial Routes of the World

Railways of the United States

Last month THE SCHOOL JOURNAL published a map showing the principal transportation routes of the world. Below is given a list of the principal railways of the United States, and under each a list of the states through which the road passes:

ATCHISON, TOPEKA AND SANTA FE RY. SYSTEM. ("Santa Fe.")

Illinois, Iowa, Missouri, Kansas, Nebraska, Colorado, Texas, New Mexico, Arizona, California, Oklahoma, Louisiana, Nevada.

ATLANTIC COAST LINE R. R.

Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama.

BALTIMORE AND OHIO R. R.

New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, West Virginia, Ohio, Illinois, Indiana, Kentucky, Missouri.

BANGOR AND AROOSTOOK RAILROAD. Maine.

BOSTON AND ALBANY R. R.

Massachusetts, New York.

BOSTON AND MAINE RAILROAD.

New York, Massachusetts, Vermont, New Hampshire, Maine, Quebec.

BUFFALO, ROCHESTER AND PITTSBURGH RAILWAY. New York and Pennsylvania.

CANADIAN NORTHERN RY.

Manitoba, Saskatchewan, Alberta, Ontario, Minnesota.

CANADIAN PACIFIC RY.

New Brunswick, Maine, Quebec, Ontario, Michigan, Manitoba, Assiniboia, Saskatchewan, Alberta, British Columbia.

CENTRAL OF GEORGIA RY.

Georgia, Alabama, Tennessee.

CENTRAL RAILROAD OF NEW JERSEY.

New York, New Jersey, Pennsylvania.

CENTRAL VERMONT RY.

Connecticut, Massachusetts, Vermont, Quebec.

CHESAPEAKE AND OHIO RY.

Virginia, West Virginia, Kentucky, Ohio.

CHICAGO AND ALTON, R. R.

Illinois, Missouri.

CHICAGO AND EASTERN ILLINOIS RAILROAD.

Indiana, Illinois.

CHICAGO AND NORTHWESTERN RAILWAY. (The Northwestern Line.)

Michigan, Illinois, Iowa, Wisconsin, Nebraska, Minnesota, North Dakota, South Dakota, Wyoming.

CHICAGO, BURLINGTON AND QUINCY RAILROAD. (Burlington Route.)

Illinois, Wisconsin, Minnesota, Iowa, Missouri, Nebraska, Kansas, Colorado, Wyoming, South Dakota, Montana.

CHICAGO GREAT WESTERN RAILWAY.

Illinois, Iowa, Minnesota, Missouri, Kansas, Nebraska.

CHICAGO, INDIANAPOLIS AND LOUISVILLE RY.

Indiana, Illinois, Kentucky.

CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY.

Illinois, Wisconsin, Michigan, Minnesota, Iowa, Missouri, South Dakota, North Dakota.

CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY.

Illinois, Iowa, Minnesota, South Dakota, Missouri, Nebraska, Kansas, Oklahoma, Colorado, Tennessee, Arkansas, Louisiana.

CINCINNATI, HAMILTON AND DAYTON RAILWAY.

Ohio, Indiana, Illinois.

CLEVELAND, CINCINNATI, CHICAGO AND ST. LOUIS RY.

Ohio, Indiana, Michigan, Illinois.

COLORADO AND SOUTHERN RAILWAY. (The Colorado Road.)

Colorado, Wyoming, New Mexico.

COLORADO MIDLAND RAILWAY.

Colorado.

DELAWARE AND HUDSON RAILROAD.

Pennsylvania, New York, Vermont.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD.

New York, New Jersey, Pennsylvania.

DENVER AND RIO GRANDE RAILROAD.

Colorado, New Mexico.

DETROIT AND MACKINAC RAILWAY.

Michigan.

DETROIT, TOLEDO AND IRONTON RAILWAY.

Michigan, Ohio.

DULUTH, SOUTH SHORE AND ATLANTIC RAILWAY. Michigan, Wisconsin, Minnesota.

ERIE RAILROAD.

New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois.

FLORIDA EAST COAST RAILWAY.

Florida.

"FRISCO SYSTEM."

Illinois, Indiana, Missouri, Kansas, Arkansas, Oklahoma, Texas, Tennessee, Mississippi, Alabama.

GEORGIA RAILROAD.

Georgia.

GEORGIA SOUTHERN AND FLORIDA RY.

Georgia, Florida.

GRAND RAPIDS AND INDIANA RAILWAY.

Indiana, Michigan.

GRAND TRUNK RAILWAY.

Maine, New Hampshire, Vermont, Quebec, Ontario, Illinois, Indiana, Michigan.

GREAT NORTHERN RAILWAY.

Minnesota, North Dakota, South Dakota, Iowa, Nebraska, Montana, Idaho, Washington, Wisconsin.

HOCKING VALLEY RAILWAY.

Ohio.

HOUSTON AND TEXAS CENTRAL RAILROAD.

Texas.

ILLINOIS CENTRAL RAILROAD.

Illinois, Indiana, Wisconsin, Iowa, Minnesota, South Dakota, Kentucky, Tennessee, Mississippi, Louisiana, Missouri, Alabama.

INTERCOLONIAL RAILWAY.

Nova Scotia, New Brunswick, Quebec.

INTERNATIONAL AND GREAT NORTHERN RAILROAD.

Texas.

IOWA CENTRAL RAILWAY.

Iowa and Illinois.

(To be concluded next month)

Grammar School Course in Literature

By HARRIET E. PEET, State Normal School, Salem, Mass.

The Study of a Long Poem

One of the first things to learn in the teaching of literature is that each literary form has its own movement, atmosphere, and particular end, all of which must be taken into consideration when a selection is presented to a class. A lyric, for example, has great beauty in its detail. It must be taught with minute attention to each of its parts, its playful fancies, its underlying ideas, its emotion. An epic, whose beauty would be destroyed with such attention to minutiae, must be taught with bold strokes, so that the children may feel its dignified, stately movement and participate in the noble emotions of its heroes.

Other poems differ as greatly in purpose, and therefore call for as great a difference in treatment as do the lyric and the epic. The ballad, for example, is a simple tale simply told. It is without beauty in form, interest in character, or complexity of theme. Its one interest is its dramatic story. The idyl, a romantic tale with an elaboration of the descriptive element, is like a lovely pageant passing before our eyes. The ballad has no description worthy of attention; the idyl is largely descriptive. The drama, a tale of human life expressed thru the speech and gesture of its characters, treats of the evolution of a person under the influence of social or other external influences. The ballad should be taught for its story, if its function is not to be destroyed; the idyl for its beauty of setting, its romance and sentiment; and the drama as a study in cause and effect in character and conduct.

Of the forms under consideration, the short poems, the lyrics and ballads are comparatively easily handled in teaching; the epic, idyl and drama offer much more of a problem owing to their length and complexity. Laying aside the fundamental difference for future treatment, the question may first be asked how they, or any long poem, may be treated with a class of pupils in order to bring commensurate returns for the time and effort put upon them.

A recent journal rightly criticises the "three-rule" system. In certain states it has been the custom of going thru each long selection three times: first for the general drift; second for the study of general topics; and third for close analysis of details. The author of the article, who had been taught by the method, declares that he for one was thru with a piece after the first reading. Any set method is faulty, particularly if it does not take into account the particular need of each individual poem, but the author was mistaken in his reason for condemning the plan. A selection in literature is never appreciated, or rarely enjoyed, if it is read solely for the end of the story. The pleasure derived in reading comes in the sensations, images, and the play of ideas in the gradual unfolding of the plot, else why is a story enjoyed when the coming event is so plainly foreshadowed that there is no question as to the solution? Why, also, is an old story enjoyed more than a new one? The end is known. The solution of a situation has its part in each story, but when this excites more than a pleasant curiosity it is unhealthy and tends to pervert the taste so that only defective stories and other second and

third-rate literature is enjoyed. The beauty, power, and healthfulness of good literature is so much in other elements of a story that it is safe to make a rule of telling the children the end of the story when they are wrought up over it. The end should, however, be left to play its part whenever it does not usurp the place of other things and so destroy the pleasure in each scene, experience and idea. The three-rule system is wrong because it keeps the children too long on a selection and gives the feeling of beginning-all-over-again twice too often, but not because the end of the story is known before the story is finished.

Work fails when the solution of the plot is made the "be all and end all" of a selection. To make it a success a long poem must, in the first place, be presented in such a way that its parts are kept in perspective, that is, so that it is grasped as a unit; in the second place it must be studied with sufficient detail so that the impression left by the poem is not a vague nebulous mass; and in the third place, there must be some exercise in appreciation so that the selection is made a part of the student's own thought. In spite of the criticism of the three-rule system and its hackneyed method, we shall have to acknowledge that the work on any poem groups itself into three divisions: introduction; detailed study of text; and pupils' expression of thought stimulated by the selection. These three steps, however, do not necessitate a formal reading of a selection three times with a feeling of boredom on the part of the children. They aim rather for personal initiative, careful painstaking study, and a natural, joyful creative work done in connection with the study, all of which may be worked out with but one class reading.

The first of these steps in our three-rule system, the introduction to a long poem, is not only the teacher's opportunity to interest her class in the selection to be studied, but to preserve the one thing difficult in a long poem, the unit with the parts in perspective. She will endeavor to give a survey of the whole poem to the climax, that is to the point from which the class will want to work on to the end by themselves. This may be done in various ways: the story may be told to an interesting point and the class left to finish it to themselves; a brief outline of the story may be given with a dramatic reading of the most interesting parts; the teacher may read the entire selection, or the class may read silently to themselves, but not orally, for this tends to make the work tedious and to inculcate poor oral reading. It often helps to awaken enthusiasm if several debatable questions are lightly touched upon in this first glimpse of a selection and then left unsolved. This leads the class to desire further and closer knowledge of the piece under consideration.

After the sketchy view of the story has been grasped as a great panorama, the selection may be studied by incident, if it is an epic or an idyl; or by acts and scenes, if it is a drama. This is the only step in our "three-rule system" which involves careful detailed study of the text. How can this be done economically of time, and so effectively that it enlivens the pupils' interest in the poem?

Many a teacher errs by asking too many questions; that is, she makes the pupils follow her interpretation of the story rather than working out their own. The process is most fatiguing. Imagine your own state of boredom if such questions as these were asked you on the "Forest Primeval," and then similar ones on each stage of the whole of "Evangeline": What kind of a forest does the poem describe? What kind of trees were in the forest? What can be said of the noise they made? How did the trees stand? What are Druids? What kind of a voice had the trees? What did they resemble? What are harpers hoar? etc., etc. Such questions, long-continued, are not only wearisome but they shut out all possibility of independence of thought, or even a train of image thru the mind.

The familiar stanzas have a distinct impression to give:

This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, indistinct in the twilight,
Stand like Druids of old, with voices sad and prophetic.
Stand like harpers hoar, with beards that rest on their bosoms.
Loud from its rocky caverns, the deep-voiced neighboring ocean
Speaks, and in accents disconsolate answers the wail of the forest.
This is the forest primeval; but where are the hearts that beneath it
Leaped like the roe, when he hears in the woodland the voice of the huntsman?
Where is the thatch-roofed village, the home of Acadian farmers,—
Men whose lives glided on like rivers that water the woodlands,
Darkened by shadows of earth, but reflecting an image of heaven?
Waste are those pleasant farms, and the farmers forever departed!
Scattered like dust and leaves, when the mighty blasts of October
Seize them, and whirl them aloft, and sprinkle them far o'er the ocean.
Naught but tradition remains of the beautiful village of Grand-Pré.
Ye who believe in affection that hopes, and endures, and is patient,
Ye who believe in the beauty and strength of a woman's devotion,
List to the mournful tradition still sung by the pines of the forest;
List to a Tale of Love in Acadie, home of the happy.

What is a better way of getting hold of the thought of a selection, than this one of endless questioning? Is it not to ask a question which obliges the mind to look for inclusive things involving the necessary details? Would not a question as to the means of creating sadness in the poem involve all the details of pines and hemlocks, answering ocean, deserted village and scattered Acadians? Would not these be gathered from the poem by the children working independently, and be woven into one sad yet sweet impression?

Or take the opening stanza from "Snowbound":

The sun that brief December day
Rose cheerless over the hills of gray,
And, darkly circled, gave at noon

A sadder light than waning moon.
Slow tracing down the thickening sky
Its mute and ominous prophecy,
A portent seeming less than threat,
It sank from sight before it set.
A chill no coat, however stout,
Of homespun stuff could quite shut out,
A hard, dull bitterness of cold,
That checked, mid-vein, the circling race
Of life-blood in the sharpened face,
The coming of the snowstorm told.
The wind blew east; we heard the roar
Of Ocean on his wintry shore,
And felt the strong pulse throbbing there
Beat with low rhythm our inland air.

Endless questions may also be asked on this text: Of what season of the year does the poet speak? How did the sun rise? What color were the hills? What kind of light did the sun give at noon? Etc., etc. Or, on the other hand, the teacher may ask such questions as: What were the signs of the coming storm? This question involves the entire thought of the stanza, the appearance of the sun, the hills, the bitter cold, the direction of the wind, and the sound of the distant surf.

This second form of question, "What were the signs of the coming storm?" calls for a topical or paragraph recitation from the pupil, that is, a short talk. Such a question obliges the pupils to get the thought of the selections themselves and gives an opportunity for development in the power of expression. It is a comparatively easy and valueless thing to answer a question which requires only a word or a single sentence in answer; to gather impressions into a well-composed paragraph is a difficult and therefore a valuable exercise. This form of question further has the advantage of economizing time; for, when the teacher sees from the recitations of the pupil that the thought has been thoroly grasped, she can pass quickly to a new part of the selection and reserve her energies for the difficult sections.

The question requiring a paragraph answer is discovered by dividing incidents into topics. This may be done by the pupils in order to give them power to get the thought of a selection independently. They should glance thru an advance lesson, discover the topics, ask the questions which they are to answer with paragraph recitations, study the text so as to be prepared to talk well in class and then recite.

This form of work gives the children fluency in their use of English and makes a delightful recitation hour, but it does not cover all of the work. During the talks, the teacher will discover here and there vague thinking, a direct misinterpretation, or too broad a generalization. When these are discovered it is her opportunity to ask a question which will clear up the difficulty. In the "Forest Primeval," for example, the chances are that the pupils will give the general idea of the stanzas in a well-composed paragraph on the things which make the poem sad, but at the same time they will probably have vague ideas as to the meaning of druid, the primeval forest, harpers hoar and possibly one or two other things. If this is the case, the talks by the children should be followed by a number of pointed questions on druids, harpers and the virgin woods. The first question gives the children an opportunity to work out what they can by themselves, the second question gives them help where they need it. The two

are in right relation when the general question is asked first and the specific question second.

The third step in our three-rule system consists in swinging back to the general outlook by a study of some inclusive aspect of the poem such as its theme, its characters, its plot, its setting. This work may consist of a comparison of this poem with another, be it a work in criticism, or an interpretive reading. It is in this step that the pupil, thru some form of expression, either composition, dramatization, reading or memorizing, makes the poem a part of his own thought and life. In "Evangeline," for example, the pupils would work out Longfellow's purpose in writing the poem, a description of a loyal and lovable woman; they should be able to outline the story; to describe some of the beautiful or impressive scenes such as the home of Evangeline, life in Acadia, the embarkation of the Acadians, the home in the South, the camp in the Ozarks. The children should elaborate these and other subjects under titles similar to: A Review of the Story of Evangeline; Favorite Scenes from Evangeline; The Character of Evangeline.

The relation of the second and third step in the study of a long poem should be kept close. The poem should not first be studied thru and then re-read and compositions be written. These forms of expression should be commingled. At the end of the study of each incident oral reading should be used as a form of expression of thought, and wherever occasion warrants it short compositions should be written. Thus matters may be controlled so that the reading and writing done in connection with a section of the story fall only a little behind the study of the selection, and the entire work be finished with but one class reading. This does away with the feeling of beginning-all-over-again from which the children of the old three-rule system suffered, and yet it provides for thoro work.

This manner of presenting a long poem solves most of the difficulties of handling a long selection. There are, however, the differences between the forms to be studied. What characteristics has the epic, for example, which must be kept in mind in planning work upon one? What should be emphasized in an idyl? How study a drama so that its chief end is fully appreciated?

"Sohrab and Rustum," altho not a true epic, has all the characteristics essential to one, and will therefore serve us as example of its form. It has ruggedness and heroism. Its movement is dignified. It deals with a conflict between two national heroes, Sohrab the Tartar, and Rustum, his father, a Persian, who, unknown to each other, meet in a disastrous conflict. The religious element prevails thruout it, similes abound. The poem has the purifying effect in the Aristotelian sense of all great tragedies. It carries the mind away from petty personal affairs into a realm of sympathy for all suffering humanity. This is the efficacious effect of all great literature. These things must all be kept in mind in planning the work upon it.

The religious ideal which pervades this epic is the Greek ideal of fate:—

For we are all, like swimmers in the sea,
Pois'd on the top of a huge wave of fate,
Which hangs, uncertain to which side to fall.
And whether it will heave us up to land,
Or whether it will roll us out to sea,
Back out to sea, to the deep waves of death,

We know not, and no search will make us know:
Only the event will teach us in its hour.

Surely my heart cried out that it was thou,
When first I saw thee; and thy heart spoke, too,
I know it: but fate trod those promptings down
Under its iron heel; fate, fate engag'd
The strife, and hurl'd me on my father's spear.

The stately movement is obtained as it is in the Iliad and Odyssey, thru the use of similes. These delay the action and give the necessary time element and the touch of beauty. The children must be made to feel the religious element and to enjoy the exquisite similes. Such a one as the following must be studied with the same attention to detail with which you would study a lyric:

As when some hunter in the spring hath found
A breeding eagle sitting on her nest,
Upon the craggy isle of a hill-lake,
And pierc'd her with an arrow as she rose,
And follow'd her to find where she fell
Far off;—anon her mate comes winging back
From hunting, and a great way off descries
His huddling young left sole; at last, he checks
His pinion, and with short uneasy sweeps,
Circles above his eyry, with loud screams
Chiding his mate back to her nest, but she
Lies dying, with an arrow in her side,
In some far stony gorge out of his ken,
A heap of fluttering feathers: never more
Shall the lake glass her, flying over it;
Never the black and dripping precipices
Echo her stormy scream as she sails by:
As that poor bird flies home, nor knows his loss,
So Rustum knew not his own loss, but stood
Over his dying son, and knew him not.

With these things in mind, the greatness of the heroes, the conflict, the religious spirit, the stately movement, the beauty of the similes, the teacher may plan her work. The introduction to the study would naturally insist on a picturesque description of the geographical setting, the sandy wastes that lie about the Aral sea, the Tartar tribes from "high Pamere," the unkempt men from northern steppes, the well-ordered Persians. Information for this may be obtained from the poem itself and from a map, or better still, from an article on travel of two years ago in *Scribner's Monthly*. With a vivid picture of the setting before the class, the teacher may either tell or read the story of "Sohrab and Rustum" to the meeting of father and son on the battlefield.

The introduction should be followed by a detailed study of the text by incidents. These consist of Sohrab's request of Peran-Wisa; the muster of the troops; the challenge and its acceptance; in Rustum's tents, the preparation of the warriors; the meeting of father and son; the conflict; the revelation of father to son; Rustum's grief; Sohrab's words of comfort to his father; the death of Sohrab; the departure of the armies. In the study of these incidents, the class would glance thru the text of a new incident to discover the topics. They would study these and make reports and then read the incidents. Where similes occurred they would memorize them.

For the third step, the summing up and creative work, the class would naturally write upon such subjects as love between father and son, the outcome of deceit, favorite scenes, the character of Sohrab or Rustum, the theme.

Fire Protection for Schools

Exits as Part of the Fire Drill

By PETER JOSEPH MCKEON, Secretary of The Fire Bureau, New York.

It cannot be emphasized too strongly that the character and capacity of the exits is the most important feature of the Fire Drill. It avails little to have the pupils trained to march rapidly and in good order, if they are to be led down stairways that are already attacked by flames or hot smoke, or if these stairways lead to insufficient or defective exit doors at the ground level. The Collinwood School fire demonstrated this principle, that is, the Fire Drill was carried out, but the stairways proved to be veritable fire flues.

Whoever has charge of the Fire Drill, therefore, must look to the exits and give them the closest study. In this particular, if in nothing else, it is well to get the best engineering advice obtainable. If it is a matter of self-inspection, a study of the following proposed Exit Law, adapted by the writer from the Building Codes of Cleveland and New York, will be found helpful in determining if the exits of a school building are adequate and conform to good practice.

PROPOSED EXIT LAW.

An Ordinance to provide safe and sufficient exits for school buildings in the _____ of _____.

Be it ordained by the _____ as follows:

Section No. 1.—The following provisions shall constitute and be known as the School Exit Law of the _____ of _____.

Section No. 2.—Definition of School Building.

School buildings are hereby defined as school, college or other buildings containing class drawing, lecture or other rooms for the purpose of education or instruction.

Section No. 3.—Definition of Exits.

An exit is hereby defined to be a doorway (a) in the exterior walls of a building, and (b) opening on the level of a street, or on an alley, court or yard connecting directly with a street.

Section No. 4.—Number of Exits.

All school buildings shall be provided with (a) at least two exits, and (b) additional exits to permit all persons who may be in the building at any time to leave the building within four minutes at the rate of one hundred and twenty (120) persons per minute per exit.

Section No. 5.—Character of Exit Passages.

All exits shall be reached by stairways or halls with enclosures as hereafter specified.

Section No. 6.—Enclosures for stairways or halls used to reach exits shall be constructed of self-supporting walls or partitions of the following types:

A—Brick or other incombustible materials.

B—Metal stud and lath partitions plastered on both sides.

C—Wire glass in frames of incombustible materials or metal covered wood.

D—Metal-covered double or triple batten wood.

E—Dressed and matched plank not less than two (2) inches thick.

Section No. 7.—Buildings of Fireproof or First Class Construction.

In buildings of fireproof or first class construction, only types A, B or C of enclosure partitions shall be used.

In buildings of fireproof or first class construction, all stairs shall be constructed of incombustible materials.

Treads and landings of stone, slate or marble shall be each supported directly underneath for their entire length and width by an iron plate made solid or with openings not larger than four (4) square inches, of adequate strength and securely fastened to the strings.

Treads and landings of iron shall be cast iron, with all upper surfaces properly corrugated, ribbed or otherwise provided with safety treads.

Section No. 8.—Wire Glass.

All glass used in doors or partitions of enclosures shall be (a) wire glass, and (b) not larger in size of pane or sheet than 20 inches by 60 inches.

Section No. 9.—Stairs.

No stairs shall be less than three (3) feet six (6) inches wide in the clear between hand rails or between hand rail and enclosed side of stairway.

No main stairs to which two side stairs connect shall be less than the combined width of the two (2) side stairs.

All stairs shall be continuous from the ground floor to and thru the roof with door and bulkhead. Roof doors shall not be locked in any way except by a bolt or hooks, which can be drawn without the use of a key.

Stairways shall be located remote from one another and at opposite sides or corners of the building.

All stairs connecting the ground floor with the basement or cellar shall be located outside the exterior building walls.

Section No. 10.—Stair Landings.

No stairs shall have more than sixteen (16) risers in a run without an intermediate landing.

If a stair landing is in the direction of the run of the stairs its depth shall not be less than the sum of two (2) of its risers and two (2) of its treads.

If a stair landing is at the turn of a stairs it shall (a) be without steps; and (b) its depth shall never be less than the width of the stairway measured over all.

If a stair landing is for two (2) side stairs connecting with one (1) main stairs, it shall be (a) without steps and (b) in depth not less than three-quarters the width of the main stairs over all.

Section No. 11.—Hand rails.

All stairways shall have hand rails on both sides of the stairs, but hand rails are not required on level landings or platforms.

Section No. 12.—Doors.

All doors to stairways and halls used for exits shall be (a) self-closing doors with fusible link releasing hardware and (b) constructed of incombustible materials or metal covered wood.

No door in a stairway or hall used for exits shall open directly on a flight of stairs, but shall open on a landing. All exit doors shall swing outward and have hardware to hold them open in emergencies.

Events of the Year 1908 in Outline--II.

By MAUD ELMA KINGSLEY, Maine

The Presidential Election

PRELIMINARY DISCUSSION

- a. The opinion of the people on the question of Corporation Control was expressed in the Convention of the great political parties which met in the early summer to nominate candidates for the Presidency of the United States.
 - (1) The conservative element in the Republican party urged that the policy of President Roosevelt in regard to corporation control be repudiated and that the party be brought back to the close alliance with the great business interests which had been formed in 1894.
(This alliance, it was alleged, had been the foundation of ten years of unprecedented prosperity.)
 - (2) Within the Democratic party this same conservative element demanded the nomination of a Presidential candidate whose election could be construed as indicating the preference of the country for the old Democratic principles of state sovereignty and individual liberty.
(In both conventions the conservative element was overwhelmingly defeated.)
- a. The Republican Convention, acting in accordance with the expressed wish of President Roosevelt, nominated Mr. Taft of Ohio, the President's Secretary of War and close confidant, who declared his intention, if elected, of bringing the reforms inaugurated by President Roosevelt into successful operation.
- b. The Democrats nominated Mr. Bryan of Nebraska, who, for twelve years, has been the leader of the radical reform element in the party.
- c. Platform of the Chief Political Parties.
 - (1) Mr. Bryan declared that he and his associates were the proper persons to carry out the Roosevelt policies, since Mr. Taft, if not a reactionary himself, was surrounded by reactionaries and would be controlled by them.
 - (2) The Democrats also proposed, if given the power, to so readjust the tariff that no manufacturing or trading corporation should be able to monopolize the American market for its products.
 - (3) The Republicans refused to sacrifice the principle of the Protective Tariff in the effort to check monopolistic corporations; but promised, if continued in power, to revise the tariff with a view to taking away protection when misused or no longer useful.
 - (4) Neither party proposed to make a party question of currency reform.
 - (5) In regard to the Philippines.
 - (a) The Republicans proposed to continue the existing policy of preparing the Filipinos for independence in a distant and indefinite future.
 - (b) The Democrats proposed to promise absolute independence at a definite and not distant date.
- d. The Labor Organizations, which include in their membership a very considerable proportion of the voters of the United States, requested of both conventions a declaration in their interest condemning what they alleged to be an abuse of the power of injunction by the Federal Courts.
Note.—This "power of injunction" enables a judge to forbid summarily, during a limited period, action by one party to a suit which may be decided finally to be beyond that party's legal rights and which will inflict irreparable injury on the other party to the suit. It sometimes happens that an employer finds out that a labor organization is about to order a strike among his employees. He brings suit against the organization or its leaders for conspiracy and asks for an injunction forbidding the issuing of the strike order until the suit can be decided. As the effect of a strike is largely dependent on the two points of formal declaration and timeliness, the effect of the injunction, if issued, is to impair seriously the undisputed right of employees to strike.
 - (1) The Republican Convention promised to limit and define by law the right of judicial injunction.
 - (2) The Democratic proposition was to forbid an injunction being issued in labor disputes until after a jury trial of the facts in dispute.
- e. The Socialists.
 - (1) Nominations were made by the Socialists, whose program looked to an entire remodelling of political and economic foundations.
- f. The Independence League.
 - (1) Nominations were made by the Independence League, a new party composed of men who believed that many socialistic improvements might be made in existing institutions.
(Both these minor parties agreed that neither the Republican policy of promoting prosperity thru governmental fostering of the commercial interest nor the traditional Democratic policy of limiting the function of the government to police duty was of any use to the people in the war against the ambition and greed of the great corporations.)

THE CAMPAIGN

- a. The country generally, however, could see no political crisis requiring a new party alignment, and the campaign opened as the usual contest between the Republican and Democratic parties for the independent vote, which has decided all presidential elections during the past twenty years.
- b. At the beginning of the campaign it was evident that public attention was directed solely to economic discussion, and that the independent vote would support the party which seemed to offer the best policy for promptly restoring commercial prosperity

without surrendering to the corporations.

- (1) This attitude of the public gave the party in power a great advantage.
 - (a) The Democrats could not accuse the administration of responsibility for the panic without seeming to condemn the administration's most popular measures.
 - (b) They were debarred from criticism of the administration's foreign and colonial policy by the utter indifference of the voters to these questions.
 - (c) They could not advocate radical tariff reform because a general discussion of this question has a tendency to unsettle business confidence.
- c. The Republicans announced their policy of promoting in all ways legitimate business, while unswervingly adhering to the policy of correcting business abuses.
 - (1) Their opponents could only maintain that the Democratic party was, by its traditions and the character of its leaders, better fitted than the Republican party to prosecute such a policy successfully.
- d. Noteworthy Features in the Conduct of the Campaign.
 - (1) The long and strenuous speaking tours of both the leading presidential candidates thru the doubtful states.
 - (2) The active interest of President Roosevelt in the campaign, in behalf of the Republican candidate.
 - (3) The prompt retirement from the campaign of some prominent politicians of both parties on the production of documentary evidence that they had used their political influence as an asset in business dealings with a powerful and suspected corporation.
 - (4) In this campaign, for the first time, the two leading parties made public the names of contributors to their campaign funds, both parties realizing the necessity of showing clean hands in view of the question uppermost in the public mind.

(The whole campaign was conducted without evidence of public excitement and with very little evidence of popular enthusiasm.)

e. Results of the Campaign.

- (1) The election of an overwhelming majority of Republican electors, insuring the election of William H. Taft of Ohio and of James Sherman of New York, as President and Vice-President of the United States for the term beginning March 4th, 1909.

Note.—The House of Representatives in the Sixty-first Congress will have a large Republican majority; and about two-thirds of the Senators will be Republicans, as in the present Congress.

At the same time, however, many Democratic governors were elected in states which chose Republican electors; and in other states, the Republican state tickets fell thousands of votes behind the electoral tickets, indicating that the Republican victory was won by the aid of voters on whom the party could not depend under all circumstances.

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Minor Events

1. The Public Domain.

Note.—Altho the attention of the general public has been directed, during the year, mainly to business and to party politics, a persistent campaign has been waged in behalf of definite policy in the solution of two national problems of importance. The first problem is, "What is to be done with the public domain?"

The Public Domain is that portion of the natural resources of the United States which has not yet passed into private ownership. Very little land remains in possession of the United States Government which can be taken up by settlers, under the ordinary homestead laws. The greater part of the public domain is land which can be cultivated only by expensive and systematic irrigation, grazing land, coal and mineral deposits, and land which is, or should be, forest-covered.

- a. Advanced reformers urge that the greater part of this domain be held by the government and operated for the general benefit, not for the particular benefit of those who live on or near it.
- b. They urge, even, that the domain be increased by the purchase of land from which private owners have stripped all that can profitably be taken off under existing wasteful methods of operation.
 - (1) Against this policy it is urged that had it been the policy of the United States from the beginning, the country could never have grown to its present proportions and that the best use to which the natural resources of a wilderness can be put is to form the foundation of a self-supporting, civilized community in the wilderness itself.

2. The Problem of Converting the Inland Waterways of the Country into Real Commercial Highways.

Note.—The rapid development of railroad communication in the latter half of the nineteenth century caused the commercial advantages offered by the navigable rivers of the United States to be overlooked and almost forgotten. That this result has been brought about more thru the immense opportunity for individual profit afforded by railroad development than by public aversion to water transportation, is proved by the fact that on the Great Lakes, where nature has provided a deep-water channel for everybody's use, the volume of water-borne commerce is constantly increasing.

- a. The region between the Alleghany Mountains and the Rocky Mountains is now demanding of the States and of the Federal Government that public water highways be provided at the public expense.

Note.—There is abundance of water in the Mississippi Valley for this purpose, but the task of providing suitable channels for vessels drawing twelve feet or more water, as is proposed, will be an enormous one, and one that will require the most careful consideration.

(To be continued next month)

Present Day History and Geography

Notes of the News of the World

After the first of next July it will be illegal to sell liquor in Tennessee within four miles of a schoolhouse. If the people see to it that the schoolhouses are not more than eight miles apart, the state will thus be forced to enter the ranks of the prohibitionists.

Thru a bill which has recently been passed by Congress, the salary of the President of the United States is increased from \$50,000 to \$100,000, that of the vice-president and speaker of the House of Representatives from \$12,000 to \$15,000, the chief justice of the Supreme Court from \$13,000 to \$15,000, and the associate justices from \$12,500 to \$14,500.

The committee of the Red Cross Society which had charge of the sale of Christmas stamps reports that the total receipts from the 1,500,000 stamps sold was something over \$15,000. All of this beyond the actual expense will be used in the fight against tuberculosis.

A method has been invented for rolling sheets of aluminum thinner than those of tinfoil. One of the advantages of aluminum foil as a substitute for tinfoil is that it is absolutely non-poisonous. Tinfoil contains salts that are more or less poisonous. The new material will therefore be of particular advantage for wrapping candies.

An international opium conference met at Shanghai, China, February 1st. The countries represented included China, Japan, Great Britain, France, Germany, Turkey and the United States. The purpose was to determine means for the control of the opium and morphine trade. The Chinese government is trying to suppress the sale and use of opium in that country, but to overcome the evil it is necessary that China have the co-operation of the other nations.

An interesting device has been patented in New Zealand for indicating to railroad passengers the name of the next station. The names of the stations along the route are printed on a roll which turns by means of two wheels. Thru an arrangement connected with the track, when the car passes over a certain spot before reaching a station the roll turns, so announcing the name of the station. To those of us who have suffered from the mumbling of names on the part of brakemen, such an invention would certainly prove a boon. It is to be hoped that something similar will be adopted for use in the United States.

The New York local branch of the Telegraphers' Union has elected Miss Hilda Svenson secretary-treasurer. It is her duty to look after the fifteen hundred men and three hundred women who belong to the organization. Miss Svenson is twenty-five years old.

The system of school savings banks has been successfully carried on in every city in the 101 in which it has been tried. A tabulated circular recently issued shows that since its inauguration, twenty-three years ago, 1,102 schoolhouses have adopted the system and 7,255 banks have assisted

in the work. There are more than 500,000 pupils registered, and the total deposits in the banks in the United States and Canada have amounted to almost five million dollars. Of this amount nearly four million dollars have been withdrawn.

The great aim of the school savings bank is its educational value, and a large number of depositors is held as preferable to a large figure of deposits.

Waterway Between Canada and U. S.

Consul Charles Deal, of St. Johns, Quebec, reports on the conference at Ottawa between American and Canadian interests for the making of a great inland waterway between the Dominion and New York City, thru Lake Champlain, the Champlain Canal, and Hudson River. The consul adds that with the carrying out of this project there will be an opportunity for the investment of American capital and the employment of American labor.

Floods in Germany

The rivers of Germany and Austria overflowed their banks, and did great damage in many places in the early part of February. Along the Rhine, the Elbe, the Main, the Danube and the Oder loss of life and property were reported.

Railroad traffic on the right side of the Rhine was discontinued, owing to the washing out of the track and the destruction of several bridges. The Danube rose 22 feet above its normal level and flooded twenty villages. The Weser rose 21 feet, the Ruhr 23 feet, and the Rhine 11 feet, within twenty-four hours.

French Letter Telegrams

Consul-General Horace Lee Washington, of Marseilles, advises that after some delay in the date first understood an innovation in the French postal service was inaugurated on December 7, when from certain offices in France and Corsica, letter telegrams paid in advance were transmitted by wire during the night at the rate of 1 centime ($\frac{1}{4}$ of a cent) the word. No messages are forwarded at a charge of less than 50 centimes (10 cents). The messages are sent out as mail matter by the early deliveries. He says:

Altho messages are only forwarded during the night after 9 o'clock, they may be deposited after 7 in the evening, and at the designated offices, which are open until midnight, up to 11 o'clock. They are received up to midnight at offices which are open all night. The following cities will have the service until midnight: Paris, Bordeaux, Boulogne-sur-Mer, Brest, Calais, Cherbourg, Le Havre, Lille, Lyons, Marseilles, Montpellier, Nancy, Nice, Roubaix, Toulouse, and Tourcoing, the principal offices of which are open until midnight, and at the minor offices until 11 o'clock.

The following cities will have the service only until 11 o'clock: Agen, Aix-en-Provence, Ajaccio, Amiens, Angers, Arras, Avignon, Bastia, Bayonne, Besançon, Béziers, Biarritz, Boulogne-sur-Seine, Caen, Cambria, Cannes, Carcassonne, Cette, Châlons-sur-Marne, Clermont-Ferrand, Dijon, Dieppe, Douai, Dunkerque, Elbeuf, Grenoble,

Laval, Levallois-Perret, Limoges, Lorient, Mâcon, Le Mans, Montauban, Montecarlo, Nantes, Narbonne, Neuilly-sur-Seine, Nîmes, Orléans, Pau, Perpignan, Rheims, Rennes, Rochefort, Rouen, Saint-Etienne, Saint Nazaire, Saint Quentin, Toulon, Tours, Troyes, Valence, Valenciennes, and Versailles.

The letter telegram is an experiment, and its continuation will depend upon the extent the public avails itself of this opportunity. Considering the low rate provided, and the immense convenience to business interests that admits of lengthy messages being sent at the close of a business day and received early the morning following at points two or more days distant perhaps by ordinary mail facilities, as is the case when letters are sent from Corsica to Paris, and twenty hours when sent from the southeastern section to the capital.

Between cities not on a main line connection much practical convenience will result, since the length of time required by ordinary postal service across even comparatively small distances in France not directly connected is often too great to admit of a letter mailed at night reaching its destination on the morning of the following day. It is estimated that an appreciable portion of the patronage will come in this way.

Chinese Incense Sticks

The manufacture of joss sticks (often known as punk in the United States) in Canton is quite an extensive industry, and the exports to foreign countries during the last few years indicate an increasing trade in that direction, writes Vice-Consul Willard B. Hull, of Canton. During 1906 there were 1,598,800 pounds of this article shipped out of Canton, the value of which was \$65,616, United States currency, while in 1907 the exports increased to 2,239,400 pounds, valued at \$104,806. The declared value of exports to the United States during recent years was \$26,175 in 1905, \$3,015 in 1906, \$20,339 in 1907, and \$9,333 for the first nine months of 1908.

In the manufacture of the best grades the following materials are used in making up a quantity of 30,000 joss sticks, namely:

Pounds	Kind	Cts per pound	U. S. currency
9.....	Sandalwood	5	\$0.45
13.....	Kung heung wood.....	9	1.17
4.....	Cedar	4	.16
2.....	Sik liu powder	3	.06
3.....	Rhubarb	3	.09
1.....	Cloves	20	.10
13.....	Sheung shek	4	.52
11.....	Cheap sandalwood	4	.44
2.....	Yellow powder	3	.06
1.....	White sugar	3	.03
1.....	Chinese wine	2	.01
30,000	bamboo sticks.....	a50	1.50
Cost of labor for 39,000	joss sticks.....	a52	.96
Total			\$5.55
a Per 10,000.			

Some of the woods used in the manufacture of this incense are found only in China, and therefore no foreign names can be given them.

The method of manufacture is very interesting. The various kinds of woods used are reduced by hand to a dust with rasps or files. The sugar and minerals used are ground to a fine powder in mill-

stones. The materials, in the proportion mentioned, are then mixed in an urn, Chinese wine being used to moisten them, and are there thoroughly kneaded. When sufficiently mixed the mass is given to the man who rolls the sticks. This person sits before a table, sprinkled with sandalwood dust, with a basket in his lap, in his right hand a wooden trowel, and in his left a bunch of bamboo sticks. The mixture is worked down to a body about the size of a large wire, when a stick is put onto the table, and with the trowel the substance is skillfully rolled onto the bamboo stick. The alcohol in the wine causes it to dry rapidly, and the sticks are ready for packing almost immediately. The workers are paid at the rate of 32 cents United States currency per 10,000 sticks, and an experienced man is able to roll as many as 8,000 per day, while the average is about 6,000 per day.

There are many kinds of joss sticks manufactured in Canton. The best grades are all made on bamboo sticks and vary in size, some being as long as 3 feet, while the shortest are about 1 foot. Others are made in the shape of spirals. The bulk of those shipped to the United States are of the cheaper quality, and are made chiefly of paper or bamboo pulp with nothing added to give it a scent. The market prices f. o. b. Canton of these poorer grades are as follows:

With bamboo sticks, 1 box containing 200 bundles each bundle 10 packets, and each packet 18 sticks, per box, United States currency.....	\$3.70
Without bamboo, 1 box containing 100 packets, each having 24 sticks 19 inches long, per box.....	1.00
With bamboo, 1 box containing 400 packets, each having 12 sticks 9½ inches long, per box.....	1.10

Goats as Fire Fighters

Three thousand angora goats herded out on the brush-covered foothills of California are going to do some hard work for Uncle Sam during the coming two years beginning this spring. The experiment will be unique both as a stock-raising proposition and as an engineering and tree culture problem.

The little white animals whose long wool is of such great value are going to be put to no less a task than constructing mile after mile of fire line through the bushy chaparral growth in the National Forests, saving much labor by the United States Forest Service engineers and making way for forestation by merchantable trees. Not the least important feature of the experiment, which for the first two years will be confined to the Lassen Forest, is the fact that the task will be performed during the regular grazing by the goats which will not even realize they are doing a valuable work.

Plans for carrying on the work are outlined in a co-operative agreement drawn up by the Forest Service and the owner of a band of angora goats grazing on the Lassen National Forest of California. The scheme is to run fire lines parallel with the contour of the slopes by cutting trails about eighty rods apart. These trails are to serve as guides for the angoras. They will graze in each direction from the trails, killing, it is estimated, a strip of brush about 300 yards wide. The wide lanes cut out and grazed by the goats will serve as ideal fire lines in protecting the forest-covered lands lying beyond and around the chaparral areas, and also make a place for reproduction of merchantable trees.

For the past two years the government has been carrying on permanent improvements in the Na-

tional Forests on an extensive scale, and the construction of fire lanes and trails has been one of the most important features of the work. The task of clearing the ground and providing land for good forest trees is, however, perhaps the most important benefit expected.

The proposed work of the angora goats may finally solve the chaparral problem which has been troublesome in the State of California for many years. The bushy chaparral growth chokes out seedlings of valuable commercial trees which may get a start, and when dry is one of the worst kinds of fire risks. Often a small blaze which starts in it gains such headway in a few minutes as to travel hundreds of yards and lick into valuable stands of merchantable timber.

The protection to be afforded by the goat-built fire lanes, therefore, may at last bring relief to the state, which in the past has had its full share of timber loss through destructive forest fires. At the same time, a large amount of chaparral will be killed out to make room for the growth of good trees that produce lumber.

Lincoln Day in Larue County

Probably the most interesting of all the Lincoln Day celebrations held in the country was the one in Larue County, Kentucky, at the birthplace of the Martyr President.

Some time ago the Lincoln Farm Association, founded by Robert J. Collier, of New York, seized an opportunity to buy the Lincoln farm at a commissioner's sale. A reproduction of the cabin in which Lincoln was born is to be built on the farm, and at the laying of the corner-stone on February 12 President Roosevelt was there.

Cuba Libre

The new Cuban Congress met on the 13th of January to pass on credentials of members, and three days later to elect permanent officers. Martin Morua Degado was elected president of the Senate. Colonel Orestus Ferera, a prominent military leader in the last revolution, was elected speaker of the House.

The inauguration of President Jose Miguel Gomez and Vice-President Alfredo Zayas took place on January 28.

Educational Meetings

April 8-11.—Eastern Commercial Teachers' Association, at Providence, R. I.; F. E. Lakey, English High School, Boston, president.

June 29—July 1.—Pennsylvania State Educational Association, at Bethlehem, Pa.; Supt. Charles S. Foos, Reading, president.

July 5-9.—National Educational Association, at Denver, Colorado; L. D. Harvey, Menominee, Wis., president.

April 8-10, 1909.—Alabama Educational Association, Birmingham.

July 6-9.—American Institute of Instruction, Castine, Maine; E. C. Andrews, Shelton, Conn., secretary.

Dec. 28-30.—Missouri State Teachers' Association, St. Louis; President, B. G. Shackelford, Cape Girardeau; secretary, E. M. Carter, Jefferson City.

June 16-18.—West Virginia Educational Association, Clarksburg; president, James Rosier, Fairmont; secretary, A. J. Wilkinson, Grafton.

June 29—July 1.—Western division of Oregon State Teachers' Association, Albany.

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"Social Psychology," an outline and source book, by EDWARD ALSWORTH ROSS, author of "Sin and Society," etc. Mr. Ross is professor of sociology in the University of Wisconsin. In this book he steps into an untried field and gives the young science to students of sociology for what it is worth. He does succeed in making the subject readable, which of itself is praiseworthy. He does not pretend to have escaped errors of theory or statement, but hopes that they will be detected and reported to him. His chapter on "Mob mind" is particularly forceful and interesting. He says that "Craze and fad are symptoms" and illustrates with the "Children's Crusade," "Millerism," "The Woman's Crusade," "Mrs. Nation," "The tulip mania," "The war spirit of '61." Under the head of fashion,

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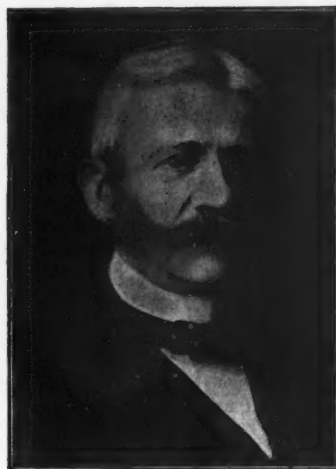
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Arbor Day Poem

Listen! the grand old forests,
Thru which our fathers journeyed,
Wherein their hearth-fires glimmered,
Are crashing sadly down;
The echoes of their falling
Are like the booming sea guns,
That tell of sore disaster
When tempests darkly frown.

Those trees of God's own planting,
Once standing with their branches
Close-locked, like loving children,
On many a mountain side;
Now, where the shade lay thickest,
The sunshine darts and quivers,
And turns to gold the wheat fields
Till all seems glorified.

We mourn the vanished grandeur
Of forests dark and stately,
Yet we have not been idle,
While ruthless axes swung;
A new, a glorious planting,
Now gives a royal promise
Of shades for generations
Whose deeds are still unsung.

We plant the pine and fir tree,
And all that wear green branches,
To give us hope of spring-time,
Tho snows are over all;
The maple is for bird-songs,
The elm for stately branches,
Whose long, protecting shadows
Thru summer noontides fall.

Listen! a pleasant whisper
Goes softly thru the branches
Of every lithe young sapling,
By earnest workers set;
It says, "The time is coming
When we shall be the forests,
And give to all the nations,
The shade they now regret."

—LILLIAN E. KNAPP in "Arbor Day Manual."

Life's Forest Tree

The day grows brief; the afternoon is slanting
Down to the west; there is no time to waste.
If you have any seed of good for planting,
You must, you must make haste.

Not as of old do you enjoy earth's pleasures
(The only joys that last are those we give).
Across the grave you cannot take gains, treasures;
But good and kind deeds live.

I would not wait for any great achievement;
You may not live to reach that far-off goal.
Speak soothing words to some heart in bereavement—
Aid some up-struggling soul.

Teach some weak life to strive for independence;
Reach out a hand to some one in sore need.
Tho it seem idle, yet in their descendants
May blossom this chance seed.

On each life path, like costly flowers faded
And cast away, are pleasures that are dead;
Good deeds, like trees, whereunder, fed and shaded,
Souls yet unborn may tread.

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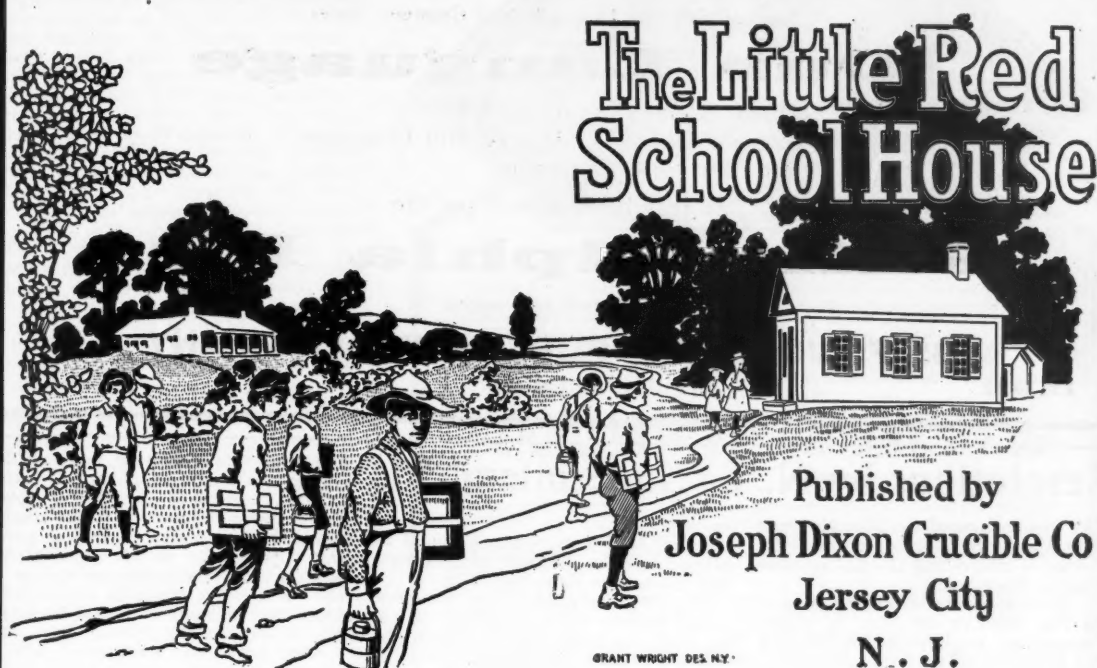
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Resolutions by N. E. Superintendents

At the meeting of the New England Superintendents, held on November 13, a series of interesting resolutions were passed. They read:

I. In view of the limited opportunities for children to play in urban communities, we wish to express our deep sense of the need of public playgrounds, especially in the densely congested parts of our cities. Far more than physical health and bodily strength are involved in the proper use of playgrounds. They would be fully justified for the added power they would give children for doing the mental work required in the schools.

II. We believe in medical inspection in schools, but we favor a more thoro system of inspection than has yet been adopted in many of our cities.

III. We believe the time has come for the incorporation into our educational system of well-organized, vocational, trade, and continuation schools. If New England is to maintain her present high standard of prosperity, the schools must do something of a very definite nature to develop vocational purpose, industrial intelligence, and mechanical and industrial skill. We have no doubt this change of educational policy will add quite as much to the efficiency of the schools from the standpoint of developing power in the pupils as from that of developing industrial efficiency. We believe,

moreover, that in such vocational training a prominent place should be given to art in its vital and intimate relation to the industries.

IV. We believe that in our complex school system a special effort should be made to teach the fundamentals. While the vital quality of education should not be neglected in favor of mechanical routine, yet the business world has a right to demand that our schools should give a thoro training in essentials, and our schools should not fail to satisfy this demand.

V. We approve of the movement which favors the use of school buildings as social centers in the community. In order that our school buildings may be made to minister to the social, intellectual and spiritual needs of the people, we believe that our larger school buildings should be provided with ample assembly rooms.

VI. Retardation in the grades points to a lack in the public schools of reaching individuals in the most effective ways. It, therefore, seems to us very important that a special study should be made of this problem with a view to adapting the work of the school to individual needs.

VII. The progress of popular education in New England has followed the appearance of trained leaders, many of whom as teachers or superintendents in local communities, or in

the employ of the State, have molded public sentiment in favor of better schools, and have greatly improved the methods of instruction and administration. This has created a growing demand for skilled superintendents in country districts as well as in the cities. We earnestly hope, therefore, that colleges will seek to interest in this work young men and women who give promise of leadership, and that legislatures will make the occupation attractive to able men and women.

The Case of Texas vs. The American Book Company

(From "The Publishers' Weekly,"
Feb. 13, 1909)

Various conflicting despatches have been published in the New York papers concerning the outcome of the suit brought against the American Book Company by the State of Texas, under the anti-trust statutes of that State. The following summary contains the essential facts of the case and the decision reached.

In February, 1908, the State Text-Book Board of Texas adopted textbooks in the various branches for a term of five years. To the American Book Company were awarded Maury's New Elements of Geography, Maury's New Complete Geography, and the Maury-Simonds Physical Geography.

Notwithstanding the fact that the American Book Company has made the same affidavit as to its organization and independence of all other companies that had been made by other competing concerns, the Governor refused to sign the contract for its books that had been adopted, and secured the passage of a resolution by the Board asking the Attorney-General to investigate and report "whether the American Book Company be a trust."

The company, by telegram and by letter, invited the fullest investigation and proffered its records, books of account and all information to further the purposes of the investigation.

After some three weeks of search and inquiry in New York the Attorney-General reported that the company should be excluded and subsequently suit was brought by the State based upon this opinion.

Then followed a more searching investigation and the taking of testimony in New York, covering a period of several weeks. Certain stipula-

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tions which set forth the history and organization of the company since its incorporation in New Jersey, in 1890, and touching the present company, were agreed upon, and the case was set for trial February 1, 1909.

On that date both parties appeared in court at Austin and announced their readiness to proceed. The Attorney-General had not only brought suit for \$7,500 against the present American Book Company of New York, which began business January 1, 1908, but against the American Book Company of New Jersey, already dissolved, which was the predecessor of the present company, and sought also to join Mr. Ambrose, the president of the company, and other stockholders as co-defendants of the New Jersey company, to recover penalties aggregating \$3,070,350.

After several days spent in arguing the legal points involved, the State, on February 4, asked that the work of selecting a jury be halted, as a compromise was imminent. An agreement was subsequently reached by the litigants, and was approved and ratified and made the judgment of the court in the case.

In the agreement reached it was admitted in writing by the State that the conditions alleged to have been brought about by the acts of the New Jersey company had been corrected, and that the New York company, having no contract with the State, and doing only an interstate business therein, had withdrawn its permit to maintain a place of business in Texas.

A decree was entered for the recovery of the sum of \$15,000 from the New Jersey Company, and the case against the New York Company and the other defendants was dismissed, thus acquitting the New York Company of all trust charges. Counsel advised the acceptance of the compromise offered rather than to prolong indefinitely the litigation with its attendant expenses.

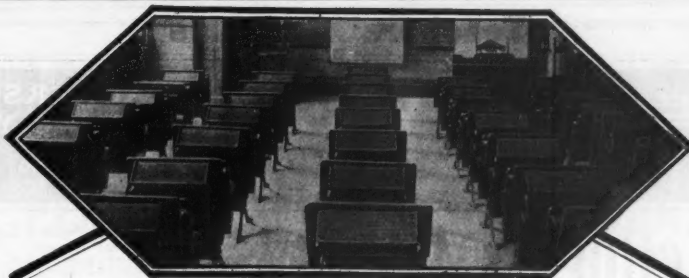
The effect of this agreement and judgment is that it removes and precludes all question as to the legality of the organization and operations of the American Book Company of New York, which is the only present existing company. It may do an interstate commerce business in Texas, as it does in other States, without obstacle or restriction, and should the company at any time desire to open an office and conduct a business in Texas, it may apply for and secure a permit to do so the same as any other corporation.

This is a very valuable decision for the American Book Company. For clearly if the State of Texas, which has the most far-reaching, drastic and energetically enforced anti-trust laws of any State in the Union, after thoro investigation and trial acquits the American Book Company of all such charges, there can be no question in other States as to the legality of its organization.

George Ade says that when a certain college president in Indiana, a clergyman, was addressing the students in the chapel at the beginning of the college year, he observed that it was "a matter of congratulation to all the friends of the college that the year had opened with the largest freshman class in its history."

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